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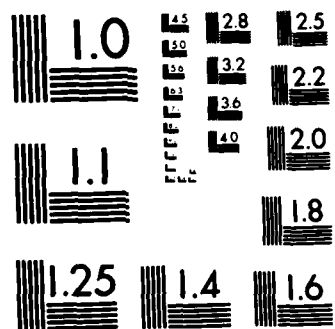
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MODELLING ECONOMIC LEVERAGE

Judith C. Fernandez

May 1984

N-2065-USDP

The Office of the Under Secretary of Defense
for Policy

Rand

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SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER N-2065-USDP	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) Modelling Economic Leverage		5. TYPE OF REPORT & PERIOD COVERED Interim
		6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) Judith C. Fernandez		8. CONTRACT OR GRANT NUMBER(s) MDA903-83-C-0148
9. PERFORMING ORGANIZATION NAME AND ADDRESS The Rand Corporation 1700 Main Street Santa Monica, CA. 90406		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS Under Secretary of Defense for Policy Washington, D.C. 20301		12. REPORT DATE May 1984
		13. NUMBER OF PAGES 72
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		15. SECURITY CLASS. (of this report) Unclassified
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report) Approved for Public Release; Distribution Unlimited		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report) No Restrictions		
18. SUPPLEMENTARY NOTES		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) USSR International trade Economic warfare Economic models		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) See reverse side		

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The United States uses various military, diplomatic, and economic means in dealing with the Soviet Union. This Note examines policies toward the Soviets that apply economic suasion by manipulating international trade. Although alternative suasion strategies are examined, the emphasis is on leverage. The discussion begins with a textbook exposition of how each of the strategies affects the Soviet Union. Next is a selective review of the recent literature on the use and effectiveness of each. Finally, a model is presented of how the strategy of leverage works, and in the context of that model the author discusses some of the factors affecting the likelihood that a leverage attempt will succeed. The Note ends with a chapter summarizing the model, its uses, and its limitations, and the relation of the model to other aspects of research on economic suasion and the Soviet Union.

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MODELLING ECONOMIC LEVERAGE

Judith C. Fernandez

May 1984

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Prepared for

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PREFACE

Under the leadership of Abraham S. Becker, Rand has conducted for the Under Secretary of Defense for Policy a research project entitled *United States Economic Leverage Over Soviet Behavior*. This Note is a product of that research, and draws from trade theory and the literature on U.S. trade strategies to develop a model of the actual workings of leverage. A companion report by Becker, *Economic Leverage on the Soviet Union in the 1980s*, R-3127-USDP, is devoted to the political economy of applying leverage.

This Note should be of interest to sections of the policy and intelligence communities concerned with the specific circumstances in which leverage is most, and least, likely to be an effective foreign policy tool.

Abraham Becker provided invaluable advice and criticism on numerous previous drafts of this document, and his involvement considerably improved it. The author also wishes to thank Keith Crane, who reviewed the final draft of the Note. His insightful comments were much appreciated.

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SUMMARY

The United States uses various military, diplomatic, and economic means in dealing with the Soviet Union. This Note examines policies that attempt to use international trade to influence Soviet behavior. Although we examine alternative suasion strategies, the emphasis is on leverage.

The past decade's literature on U.S. trade strategy toward the Soviet Union has been voluminous and, at times, acrimonious. Advocates of various persuasions debate the merits of selective and general export controls, credit restrictions, etc. But little progress is made toward a consensus, or indeed toward any lessening of the area of disagreement. In large part this is because much argument is based on anecdotes or abstract logic, neither of which has much appeal except to the already convinced, and because there is no agreement on the appropriate lessons to be drawn from the historical record.

The same historical instance in which trade sanctions have been threatened or imposed can be (and often is) cited both as a success and a failure of leverage, depending on the author's view. The key to the disagreement is the counterfactual--what Soviet behavior would have been had economic sanctions not been imposed. Did the Jackson-Vanik and Stevenson amendments cause the Soviets to allow more emigration than they would have otherwise, or would the increase have been even greater without the amendments? Counterfactuals are difficult to defend, and arguments based on them are not likely to persuade the skeptical.

The debate as currently structured seems inherently sterile; a new framework is needed for discussion, encompassing the insights of trade theory and the literature. The framework proposed here consists of a model based on disaggregation, on the assumption that it is useful to disentangle the many factors affecting leverage. The model identifies the important variables, and important interactions among variables, that affect the success of any specific attempt to apply leverage.

International trade theory illuminates how each of three major trade strategies--benefaction, denial, and leverage--affects production, consumption, and the achievement of planners' goals in the target country. (Although benefaction is unlikely to be a conscious U.S. policy practised toward the Soviet Union, it is a possible strategy and is included here.) International prices, interacting with domestic production possibilities and planners' preferences, determine levels of production and consumption in the Soviet economy, and U.S. trade strategies work by affecting international prices. The effect of any strategy on the target country (and on the United States) depends on the form and extent of the price change and on the tradeoffs inherent in Soviet production and planners' choices. This point, explicit in the constructs of trade theory, is incorporated in our model of leverage.

The model is not intended to be used to find out whether leverage will work. Rather, it is designed to indicate in what specific circumstances leverage will be most and least effective, without any judgment as to whether "most effective" means a 10 percent or 90 percent chance of success. More important, the model is designed to highlight areas of controversy that are at least potentially subject to empirical investigation.

The model reveals considerable agreement over the effect (positive or negative) of many identifiable circumstances (e.g., the number of non-U.S. suppliers of a good) on the chances for successful leverage. It illuminates the extent to which resolvable questions of fact currently cause some of the debate over the use of a leverage strategy. In addition, it indicates the importance to the debate of judgments--over likely circumstances at the time leverage is attempted, and over the relative importance of different individual variables. These issues of judgment are more difficult to resolve than questions of fact, but can be investigated systematically once they have been identified.

The model's primary usefulness lies in the identification of specific areas of both fact and judgment that are subject to empirical examination. At the same time the limitations of the model, and of the framework presented here, should be recognized. The model looks rather narrowly at the factors affecting the short-run success or failure of

leverage. It does not address such long-range issues as the effect of continued use of leverage on the Atlantic Alliance, or on future East-West relations. It also does not address such considerations as whether the goals of leverage, if achieved, are worth the economic and political costs that leverage imposes, nor of how policymakers should judge which particular Soviet actions should be greeted with economic sanctions.

All this implies that the question of a trade strategy toward the Soviet Union will be the subject of continuing and complex discussions. The model presented here should make that policy debate more useful in the future than it has been in the past.

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I. INTRODUCTION

The American effort to confront and influence aspects of Soviet behavior that are viewed as threatening to Western interests uses many interlocking approaches--military power, diplomatic contacts with the Soviet Union and with other states, other forms of political persuasion, etc. The topic of this Note is a particular approach used intermittently since World War II but lately drawing particular governmental and public attention: the exercise of economic power. The specific means used in the wielding of such power, ranging from embargoes to credit restrictions to technology controls, may be used to support one or another broad strategy of trade with the Soviet Union. Our emphasis here is on the development of a theoretical and practical framework for analyzing the effect and likely success of one trade strategy, leverage, and for examining the choice of methods used in pursuit of that strategy. To put this single strategy in perspective, we will consider the rationale, and review the recent policy debate, concerning other trade strategies as well.

It is useful to begin by identifying and distinguishing among the potential economic approaches the United States might use in the foreign policy arena. Of course, one strategy is to have no special policy for trade with the Soviet Union, and thus to have trade with that country (and its allies) governed by the same rules of trade that govern relations with other countries. If economic contacts with the Soviet Union are to be used as an active instrument of East-West relations, however, a more active policy is necessary, one that employs some form of economic suasion.

In a companion report to this one, Becker distinguishes among three broad suasion strategies, which he terms benefaction, denial, and leverage.¹ He defines benefaction as the conferral of benefits from

¹Abraham Becker, *Economic Leverage over the Soviet Union in the 1980s*, The Rand Corporation, R-3127-USDP, forthcoming. The following summary of the characteristics of the three trade strategies is drawn from Becker's report.

trade in the belief that economic assistance causes changes in the economic and political structure of the recipient society that enhance the welfare of both donor and recipient. It is different from a policy of laissez faire or free trade because it aims at providing a greater increase in the economic welfare of the target country than free trade alone would provide. Benefaction would encompass, in effect, subsidization of trade with the Soviet Union. In the current and probable future international environment, benefaction is unlikely to be a conscious policy of Western governments.

Denial strategies, in contrast to benefaction, seek to impede the growth of the target country economy. Denial may be either general or aimed at specific sectors. In either case the approach is to restrict the gains from trade available to the target country by constraining the level or composition of trade.

A denial strategy that seeks to totally eliminate any gains from trade is popularly identified as a policy of "economic warfare."² Applied to East-West trade, total denial would have the United States refusing to trade with the Soviets and attempting to persuade other countries to do the same. The objective would be to deny the Soviet Union any gains from trade, whether those gains derive from more efficient resource allocations made possible by trade or from access to military or nonmilitary products that cannot be produced domestically. Total denial, like benefaction, has seldom been advocated in recent times.

Among those who believe in denial strategies, a more common approach is to advocate a denial of some, but not all, benefits of trade to the Soviet Union. Partial denial may have various objectives, but most commonly seeks to limit Soviet military capacity. The denial may be selective, involving restrictions on particular Western exports that contribute to an increase in the quantity or quality of Soviet military production. Alternatively, the denial may be general, through restrictions on the aggregate flow of exports and credit to the Soviet Union, in the expectation that this limitation might affect the level and type of resources allocated to the military. These policies should

²The term "economic warfare" has been used in different and often inconsistent ways; this Note refers instead to total denial.

be considered as two separate species of partial denial, with the first--selective military denial--attracting allegiance (at least in principle) by most policymakers and analysts within the Atlantic Alliance, but the second--partial denial generally applied--engendering rather sharp disagreement. The two policies differ fundamentally in their implications for which products will be restricted--militarily relevant goods, or all exports. Both of these partial denial strategies, however, are aimed specifically at limiting the military sector of the Soviet Union. In this they differ from total denial, which aims at limiting the Soviet economy per se.³

Within Becker's framework, a third trade strategy, leverage, may be viewed as an alternative to both benefaction and denial. Whatever the mix of economic instruments used, the purpose of a leverage policy directed at the Soviet Union is not to weaken the Soviet economy, but to exploit a Soviet vulnerability through the application of a Western advantage so as to influence Soviet political decisions. The objective is to obtain a modification or reversal of an action or policy in exchange for a promised trade-related reward or to avoid a threatened trade-related sanction. A leverage strategy may aim either to promote or impede economic growth, depending on the circumstances, but its essential goal is to alter the behavior of a government. Promotion or impedance of growth are only instruments to that end.

Partial denial generally applied is often thought of as similar to leverage because both have as a goal changing decisions made by the Soviet leadership. But denial and leverage may be regarded as substitute rather than complementary policies because the decisions they aim to change may be in different spheres: Denial strategies are aimed at military capabilities, while leverage policies can be for the purpose of changing any aspect of Soviet behavior. In addition, the two strategies tend to be incompatible in practice because the more exports are restricted as part of a policy of denial, the fewer levers there are.

³The conceptual distinction between total denial and partial denial generally applied lies in whether the ultimate objective is to hurt the Soviet military or simply to hurt the Soviet Union. In practice, the difference between total and partial denial lies, as the terms suggest, in the severity of the trade sanctions advocated.

The three types of trade strategies--benefaction, denial, and leverage--emphasize differing time horizons. Leverage is most often thought of as short-term and episodic, where the attainment or evident frustration of the leverage-applying country's limited objective brings the episode to an end. However, leverage may also be a long-term policy, as in the Kissinger rationale of detente: Leverage needs to be maintained indefinitely to insure continuation of Soviet cooperation. This long-run aspect of leverage is often termed linkage.

Benefaction and total denial policies are decidedly long term and continuous in nature. Although in principle alteration of Soviet policy and behavior could bring a quick end to either policy, the two partial denial strategies also are long term in the sense that both seek to place a permanent brake on the growth of Soviet military might. And all denial strategies must be consistently applied over time to be effective. The two partial denial strategies differ, however, in that partial denial generally applied can be effective only in the long run, as the constraints placed on the economy as a whole begin to influence decisions about military production. In contrast, selective military denial aims, in any specific application, at a short time horizon. The goal is to delay Soviet access to a particular militarily relevant product or technology available in the West. We would like to make the delay as long as possible, but it may not be for any substantial period.

Finally, the three strategies differ in the tactics they use. Embargo, boycott, and export controls are the tactics of denial strategies. In contrast, subsidy and increased market access characterize benefaction. Leverage may be applied with either punishment or reward; the choice depends on the preferences of the policymaker and the effectiveness of the tactic in a specific situation.

The discussion of U.S. economic strategies toward the Soviet Union that follows begins with a textbook exposition of how each of the strategies discussed above affects the Soviet Union. Next is a selective review of the recent literature on the use and effectiveness of each. Finally, a model is presented of how the strategy of leverage works, and in the context of that model we discuss some of the factors affecting the likelihood that a leverage attempt will succeed. The Note

ends with a chapter summarizing the model, its uses, and its limitations, and the relation of the model to other aspects of research on economic suasion and the Soviet Union.

II. TRADE THEORY AND TRADE STRATEGIES

This chapter will briefly explore the effect of the various trade strategies identified above on Soviet production and consumption,¹ and on the achievement of planners' goals. A simple model of international trade highlights the ways in which the strategies work. The last section of this chapter indicates the effects of extending the model to make it more realistic.

In the basic model of international trade used here, the world consists of two "countries"--the Soviet Union and the Atlantic Alliance--and two categories of goods--defense and nondefense, called guns and butter for short. For ease of exposition the discussion throughout will be in terms of physical quantities and exchanges, rather than of value and prices; introducing equilibrium prices and exchange rates into the model does not alter the conclusions.

The model is based on three concepts: a domestic production-possibilities frontier, a rate at which guns and butter are exchanged in trade between the two countries, and a set of "social indifference curves" (actually, planners' preferences) in the Soviet Union. We begin, however, with the Soviet Union not trading with the other "country" of the model, so that we may show the autarkic equilibrium. With no trade, there is no international rate of exchange, only a domestic production-possibilities frontier and an indifference map.

AUTARKY

A production-possibilities (p-p) frontier is a device to show graphically the set of all possible combinations of guns and butter that can be produced by a country if all resources are fully utilized and production is efficient. It thus shows maximum possible domestic production for an economy in physical terms. Such a curve is shown in Fig. 1 as line AB. If the Soviet economy pictured in Fig. 1 devotes all

¹Here, and throughout this Note, "consumption" carries no connotation of use by individuals, but refers to the total absorption of goods by all final users, including the government.

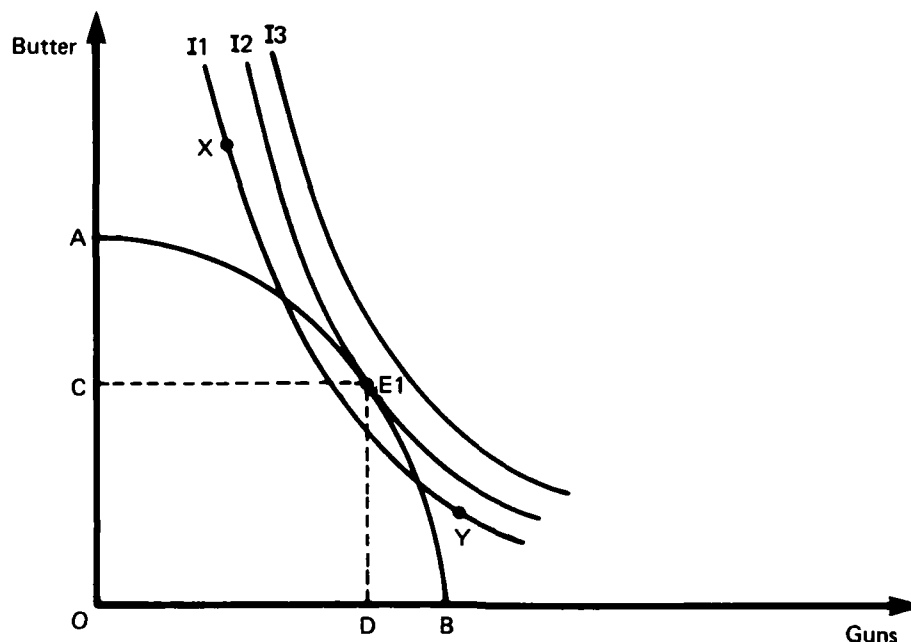


Fig. 1 -- Soviet consumption and production with no trade

its resources to producing butter, it can produce a maximum of OA butter. Alternatively, if all resources are devoted to the production of defense goods, an amount OB of guns will be forthcoming.²

In actual fact, of course, Soviet planners will want to produce some of each good, and they will choose to produce at a point somewhere on the curve connecting A and B. Every point on this curve represents a different possible combination of butter and guns, and the slope of the curve at each point gives the domestic production tradeoff, in physical terms: If the economy produces a few more guns, what is the decrease in

²This treatment assumes that the Soviet economy produces on its p-p frontier--that is, with full employment of resources and maximum efficiency. The position at which the economy produces (and consumes) will be different if this assumption is violated, but the approach remains valid. An inefficient economy, or one with underemployed resources, is for our purposes equivalent to an economy on a p-p frontier located closer to the origin, and the remainder of the analysis is unchanged. (For an application of this treatment to the case of the Soviet Union see Bergson, 1961, p. 37.)

butter production that results as resources are transferred from dairy-farming to the munitions plants? This tradeoff does not depend on domestic prices in the Soviet Union but is imposed by the interaction of available resources and the technology used in producing guns and butter.³

The economy may produce any of the feasible combinations of guns and butter shown by the p-p frontier AB. In a planned economy, the combination that is in fact produced will be determined by the the preferences of the planners.

The planners' preferences are shown in Fig. 1 by the set of lines I1, I2, and I3. Each line represents various combinations of guns and butter that provide the same level of "satisfaction" or "well-being" to the Soviet Union, in the planners' judgment. This is called the planners' indifference map, because each line represents combinations of guns and butter among which the planners are indifferent. The planners are equally pleased with consuming at point X as at point Y. They do prefer, however, any point on I2 to either X or Y (or to any other point on I1) because points along I2, being further from the origin, represent more of both guns and butter than points along I1.

The best Soviet planners can do in the absence of trade is to reach the highest indifference curve possible, given the set of feasible production possibilities. That point is identified by the tangency between the p-p frontier and an indifference curve--point E1. All other feasible production combinations lie on lower indifference curves than I2. Without trade, the production (and consumption) of butter is OC, and amount OD of guns is produced and consumed.

FREE TRADE

When the economy is opened to trade, imports make it possible for total consumption of a good to exceed the level of domestic production, thereby allowing the country to reach a higher level of satisfaction--

³The physical tradeoff (the marginal rate of transformation) along the production-possibility frontier changes as we move down the curve from A to B because the resources best adapted to gun production will be transferred first. Then, as the economy moves further away from A, fewer additional guns are forthcoming as increasingly maladapted resources are switched from the production of butter to that of guns.

to be situated on an indifference curve further from the origin--than was the case in autarky. What level of satisfaction is achieved depends on the exchange rate between guns and butter in international trade.

Figure 2 shows the situation with free trade, with the rate at which one good may be exchanged for the other in international trade indicated by the line AT. The slope of AT gives the "price" of either good in terms of the other. The price may be determined in competitive markets, or by the use of monopoly power, or through some negotiating process; for the purposes of the model the method of determining the international price of the two goods is immaterial.*

By representing price as a line on the graph, the model is able to show all possible combinations of goods available to a trading economy. If for example, the Soviet economy pictured in Fig. 2 were to produce OA amount of butter and no guns, that economy could trade all of its butter for guns and receive OT amount of guns in return. Or it could trade

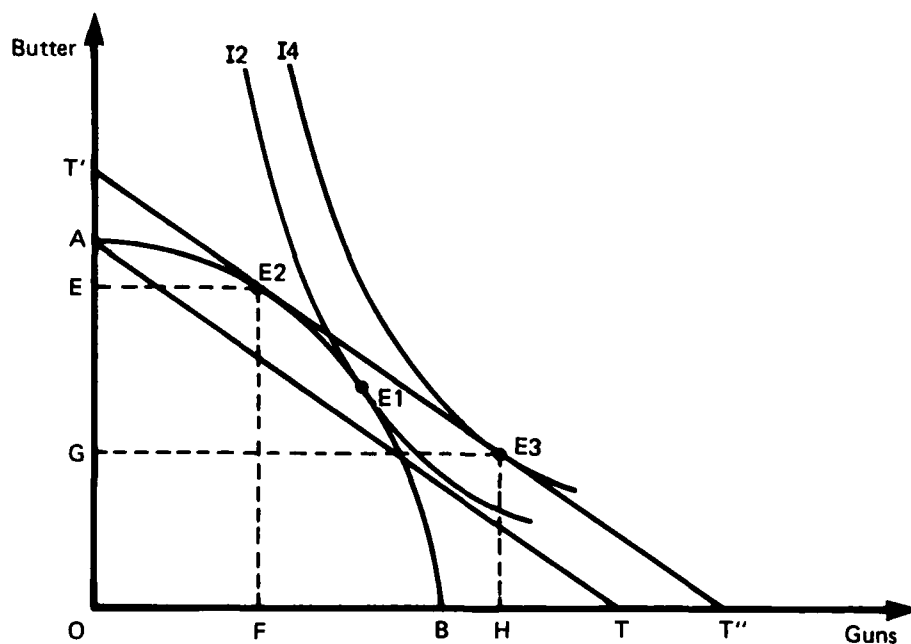


Fig. 2 -- Soviet consumption and production with free trade

*Note that the "price" determines only the slope of the line, not its distance from the origin. Any line parallel to the line AT in Fig. 2 (e.g., the line T'T''), equally well represents the tradeoff between guns and butter available through international trade.

some of its butter for some amount of guns, and the combination of butter and guns it will end up with would lie somewhere on the line AT.

The relevant price line in the free trade situation of Fig. 2 is found by moving a line with the appropriate slope out from the origin until it is tangent both to the p-p frontier and to an indifference curve. This process will identify the highest indifference curve the planners can reach, given domestic production potential and international prices. In this case, the price line is represented by T'T". The economy would produce at point E2 (on the p-p frontier) and consume at point E3 (on indifference curve I4); it would produce OE amount of butter and OF amount of guns, and then trade (moving along line T'T") until point E3 is reached. This is the consumption point. The economy will then consume OG of butter and OH of guns. By exporting an amount EG of butter in return for amount FH of guns, the planners will have climbed to the highest indifference curve they can.

The increase in welfare represented by the movement from indifference curve I2 in the autarkic state to I4 with free trade reflects the gains from trade to the Soviet economy. It exists because the trading partner is willing to trade guns for butter at a different ratio than the tradeoff available in domestic production. In a perfectly competitive world, this difference will be the result of having two countries with different p-p frontiers, or having different patterns of demand, or both. With government intervention or monopoly power, there will be other reasons for gains from trade as well. In any case, the amount of the gains from trade will depend on the extent to which the domestic tradeoff differs from the international one, and on the shape of planners' indifference curves.⁵

Although Fig. 2 shows the gains from trade only for one of the trading partners (in this case, the Soviet Union), both partners in fact gain.⁶ The total world-wide gain may accrue primarily to one trading

⁵The volume of trade has no direct relation to the amount of gain from trade--a small volume of trade between countries with very different (pre-trade) domestic tradeoffs between guns and butter may well lead to a great improvement (a large difference between I2 and I4 in Fig. 2). A large trading volume between countries with quite similar autarkic tradeoffs may yield small gains.

⁶The tenet of mutual gain can be derived theoretically from the framework used to study international economics. In practice,

partner, or it may be rather evenly divided between the two. In a free trade world, the division is determined by production and demand conditions in each country. But governments can and do intervene to increase their country's share of the benefits.⁷ Disagreements as to who gains most from trade, both in current circumstances and under free trade, underlie many arguments concerning what trade strategy the United States should pursue with regard to the Soviet Union.

The total world-wide gain derives from at least two separate aspects of trade. First, there are gains from redistributing a fixed quantity of world production in a way that maximizes welfare; in a world where countries have different patterns of demand, reallocating a fixed level of goods across national boundaries can better match preferences and consumption. Second, trade leads to increased production efficiency--with the specialization trade allows, world production will increase, even with no changes in factor inputs or technology. That is, even with no change in the production-possibility frontier of either country, the total amount of guns and of butter produced will increase, as each country produces more of the good that it produces most efficiently relative to the other country.

The gains from trade from both sources are appropriately seen as a movement to higher indifference curves. Such movement, however, can be neither observed nor measured. Nonetheless, it is important to think in such terms and to examine gains from increased trade by looking at such things as whether world production is augmented and made more efficient. The more usual appeal to the effect of trade restrictions on profits or jobs is specious. Profits can be increased and jobs created in many ways that would not increase a country's general level of well-being (e.g., lowering wages or using antiquated technology). Arguments for free trade should properly rely on the ability of trade to foster increased production efficiency and a better match between demand patterns and production realities. Increased employment, improved profits and a better balance of payments may signal that there are gains

presumably both partners are convinced there are benefits, else they would choose not to trade.

⁷In general, such intervention will reduce the total world gain from trade.

from trade, but they are not measures of the gain. Indeed, gains may occur with no changes in total employment (if workers can be shifted from less to more efficient industries) and with no change in total profit (if the gain from trade accrues to consumers in the form of lower prices, rather than to producers).

BENEFACTION, DENIAL, AND LEVERAGE/LINKAGE

The trade strategies defined in the previous chapter can be analyzed in the context of the simple trade model illustrated by Fig. 2. In each case, the result of the strategy is to move the Soviet Union (and the Western allies) to a different indifference curve than would be chosen with free trade. Although the simple model used here assumes the Atlantic Alliance is the only trading partner available to the Soviets, and that the Alliance is united in its strategy, the following section briefly examines the situation where there are other trading partners or, what is the same thing analytically, where the members of the Atlantic bloc follow differing trade strategies.

With a strategy of benefaction, the United States would subsidize trade with the Soviet Union, as shown in Fig. 3 by the new price line SS' with a different slope than $T'T''$. The new price leads to an equilibrium level of consumption that is on an indifference curve further from the origin than I_4 . In this situation, the Soviet Union will produce at point E_4 and consume at point E_5 . The distance between indifference curve I_5 , achieved with the active help of the trading partner, and curve I_4 , achieved with free trade, is a measure of the "extra" welfare conferred by the benefaction policy.^{*}

The analysis of a denial is more complex because denial can take several forms, as discussed above. The simplest case is that of total denial: The Atlantic Alliance would refuse to trade with the Soviets, denying them all gains from trade and forcing them to autarkic equilibrium, at point E_1 in Fig. 1.

^{*}Benefaction would in most circumstances cause the other trading partner--the Atlantic Alliance--to move to a lower level of welfare. Because of the efficiency losses that occur if prices imperfectly reflect real economic costs, the total world gain from trade probably would be lower as well (the Alliance loss would be greater than the Soviet gain).

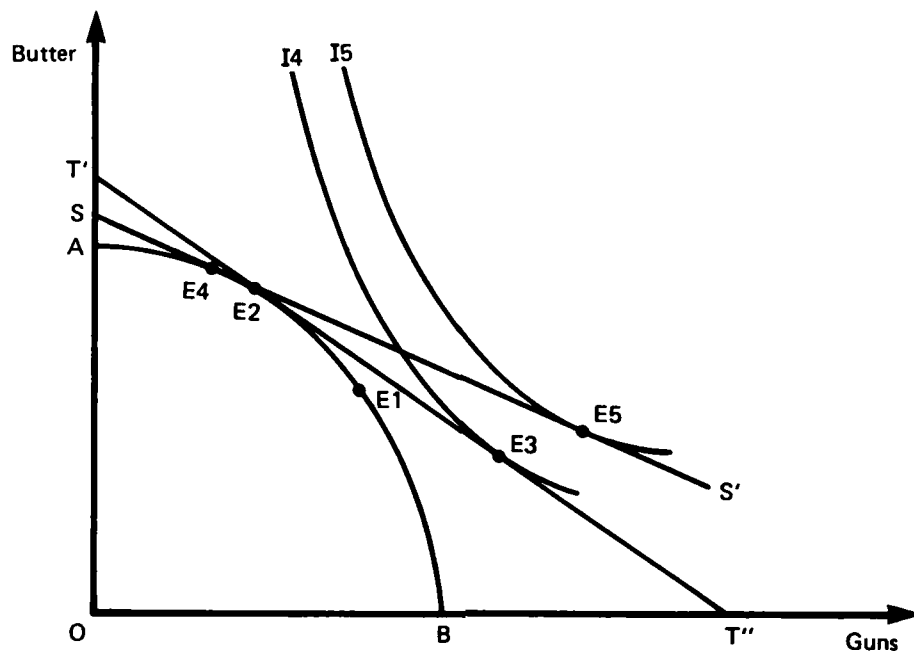


Fig. 3 -- Soviet consumption and production with benefaction

With a partial denial approach that selectively targets militarily relevant exports, gains from trade are lessened (but not eliminated) for both trading partners. The loss is a side-effect rather than the primary goal of the policy. The main objective is to insure that the consumption combination chosen by the Soviets will contain no more guns than the maximum they could produce domestically in the absence of trade.

This case results in a modified form of trade, illustrated in Fig. 4. Here the Atlantic Alliance is unwilling to allow Soviet trade to move beyond point B. The free trade situation of trading to a point such as E3 is unacceptable to the Alliance, as is all trade beyond a vertical line through B. The international trade "price" line facing the Soviets is effectively the line T'ZB in Fig. 4. In the situation shown, the new "best possible" situation for the Soviets (the way to reach the highest indifference curve) is to produce at point E2, as with free trade, and consume at point Z. They therefore produce OE of

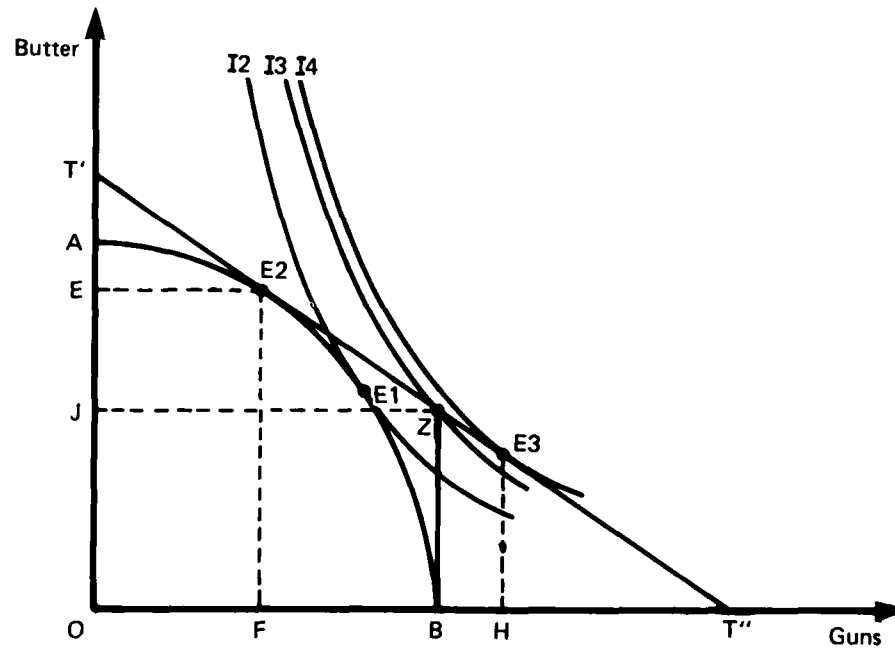


Fig. 4 -- Soviet consumption and production with selective military denial

butter, consume OJ, and trade the difference to the Atlantic Alliance in return for FB amount of guns. This leaves them consuming OB guns and OJ butter, with a level of satisfaction on indifference curve I3 that is below that achieved with free trade, but nonetheless above that achievable without trade.

In the situation as diagrammed in Fig. 4, the "best possible" point with trade has post-trade consumption of guns exactly equal to the maximum possible domestic production in the absence of trade. The Atlantic Alliance can, of course, restrict trade to a point to the left of B, causing the Soviet Union to move to some point of smaller gun consumption. But trade alone cannot move Soviet consumption of guns to any amount below that represented by E1, because any such attempt will cause the Soviets to choose autarky in preference to trade. Conversely, if the attempt of the Atlantic Alliance to restrict trade is ineffective--through embargo leakages, for example, or because there are

other nations who also trade with the Soviets--then the Soviets will be able to move down the line T'T" from point Z toward point E3.

In the context of a selective denial strategy of limiting high-technology, defense-related exports to the Soviet Union, the gap between B and H in Fig. 4 may be thought of as representing the consumption of high-technology "guns" that the Soviets would like to import because they cannot be produced domestically. Strictly speaking, however, the simple model presented here can make no distinction between high and low technology defense goods and must analyze selective denial in terms of some homogeneous product called "guns," whose consumption is limited by specific forms of trade restrictions.⁹

Both leverage and partial denial generally applied (the strategy that limits exports of all kinds to the Soviet Union in order to limit their long term potential for military production) can be examined using the same analysis. In both cases the objective is to limit, not consumption of guns, but overall welfare to a lower level than available with unrestricted trade.¹⁰ But the reason for this limitation is quite different in the two cases: Partial denial generally applied aims at slowing the growth and sophistication of the Soviet economy over the long term (to impede military growth), whereas leverage aims at inflicting pain (or granting reward) to influence Soviet policy actions. One further difference is that it is sometimes possible to exert leverage by a threat to restrict trade (or a promise to expand it), but partial denial depends on an actual restriction of trade.

In either case, the strategy aims to achieve the situation diagrammed in Fig. 5, and move the Soviet economy to a position less preferred by planners than the free trade position. The tradeoff between guns and butter in the international market is made less attractive--more like the domestic production tradeoff--so that gains from trade will be less. This situation is shown in Fig. 5 as a shift

⁹In a multi-good, multi-country model, the trade restrictions would take the form of export controls that would leave the tradeoff between "butter" and "low-technology guns" unaffected. The expository complexities involved with such a model are great, and the analysis yields little additional insight, so we remain with the simple model here.

¹⁰"Lower level" does not necessarily mean fewer guns *and* less butter, but rather means consumption on a lower indifference curve.

in the international tradeoff line from $T'T''$ to RR' , resulting in a movement from the welfare level associated with free trade (on indifference curve I_4) to a lower level of welfare. In terms of the diagram, production will now occur at point E_7 , consumption will occur at point E_8 , and welfare will fall to the level represented by indifference curve I' .

In most circumstances, restricting trade will cause the Atlantic Alliance as well as the Soviet Union to forgo some potential gains from trade. Which trading partner loses most cannot be determined without full information on production frontiers and demand patterns in both countries.

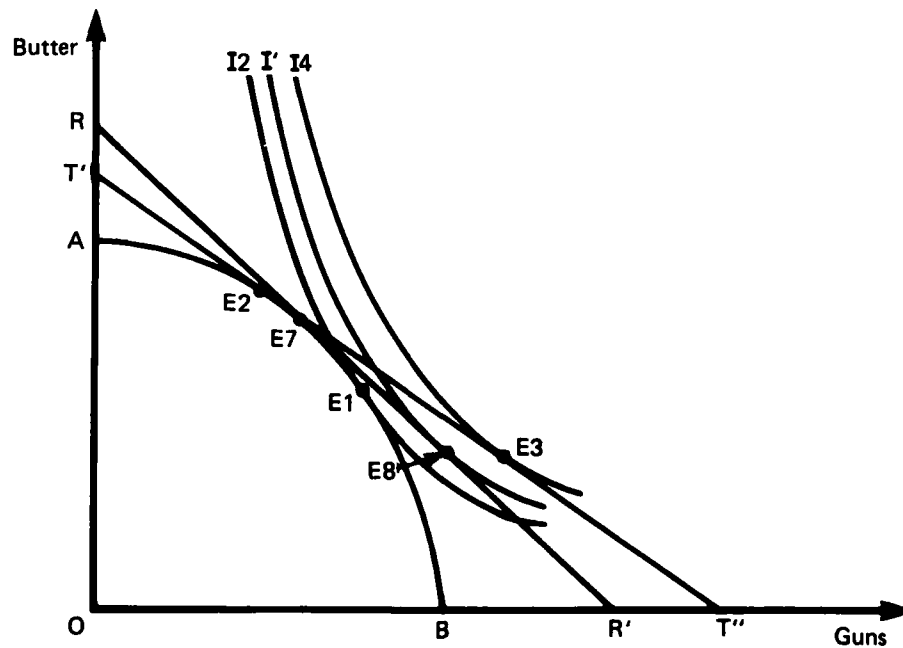


Fig. 5 -- Soviet consumption and production with partial denial or leverage

As the situation has been drawn in Fig. 5, equilibrium after leverage or partial denial involves less Soviet consumption of guns and about the same amount of butter as would be consumed at the free trade point. In some circumstances, however, the end result of the policy could be an increase in the level of Soviet consumption of guns, coupled with a reduction in the consumption of butter. In terms of Fig. 5, it is possible for the Soviet Union to end up at a point on indifference curve I' to the right of the free trade consumption point $E3$. Whether this will indeed be the result of restrictive Western trade policies depends on the interaction of planners' preferences, domestic production possibilities, and the form the restriction takes. There may be cases where a restrictive trade policy causes a loss to the Soviet economy, but at the cost of a short run increase in consumption of military goods, posing a dilemma for Western policymakers.

EXTENSIONS OF THE SIMPLE THEORY

Of course, the world is not as simple as diagrammed in Figs. 2-5. With multiple trade partners, and an alliance whose members do not always act in concert, pricing arrangements may be more complex. There may be no single world price for guns or butter, for example. Modifying the simple model to allow for this contingency means first redefining the two "countries" in the figures, so that one country is now the Soviet Union and the other is the rest of the world. The analysis remains the same as before, except that the price line may now have several bends in it, with each segment corresponding to the price offered by a different country. The essence of the above analysis remains unchanged, but the proliferation of actors changes the likelihood of actually achieving any specific change in international prices desired by the United States.

The real world price line also may be bent in one or more places (or may be discontinuous) because the chosen U.S. trade strategy may be more complex than the ones described above. For example, the United

States may want to impose a two-part export price schedule, high for initial Soviet imports of U.S. products but lower for additional ones.¹¹

Regardless of how complex the details of the attempt to apply leverage or denial policies, the degree to which they will be successful varies with the state of the world and the state of the Atlantic Alliance. These subjects will be explored in detail in Chapter IV, following a selective review of recent literature about the various trade strategies modeled here.

¹¹The concept of leverage using a two-part price schedule has been developed by Rand colleague Stephen Salant in "Punishing Soviet Expansion Without Encouraging It: Distinguishing the Ex Post Incentive Effects of a Sanction from Its Ex Ante Value as a Potential Deterrent" (unpublished paper, 1982). Salant uses the case of sanctions on oil-drilling equipment and a model having a large fixed fee for access to the U.S. market but subsidized per-unit prices. Other forms of multi-part price schedules could also be used in U.S.-Soviet trade.

III. A REVIEW OF THE LITERATURE

U.S. trade sanctions against the Soviet Union following the 1979 invasion of Afghanistan, and again after the imposition of martial law in Poland in the waning days of 1981, gave new vigor to a long standing debate concerning the appropriateness and effectiveness of using economic suasion to influence Soviet political and military behavior. In one form or another, both in the United States and in the countries of Western Europe, this debate has raged since the end of World War II. Unfortunately, the length of the debate has done little to improve the quality of argument and evidence used in it, nor has it led to much narrowing of the area of disagreement.

The purpose of this chapter is to selectively review the debate as it has occurred in the United States since 1970. For present purposes, the literature has been defined rather broadly to include (1) analytic or conjectural essays specifically addressing the use or effectiveness of one strategy or another of trade relations with the Soviet Union; (2) Congressional hearings on economic sanctions, on technology trade with the Soviets, and on East-West economic relations generally; (3) articles and books concerning Western exports to the Soviet Union (and Eastern Europe) of particular product groups, most commonly high technology products; and (4) research on the general importance of Western exports to the Soviet economy. To review all the literature in these four categories would be a monumental undertaking. This review therefore is limited to a representative sample and makes no claim to being exhaustive.

This chapter will first survey the primary positions taken by participants in the debate over trade strategy, and the evidence advanced to support these positions.¹ It then suggests several reasons why these long and vigorous discussions have failed to lead to much

¹For an insightful summary of the debate over trade strategy that focuses on basic assumptions inherent in each position, see Bertsch (1980). For a succinct summary of the positions taken by various departments of the federal government under the Reagan Administration, see U.S. Congress (1982).

convergence of views, and why the debate over strategies may be inherently sterile in its present form.

POSITIONS IN THE DEBATE

The debate on the appropriate economic policy for the United States to adopt toward the Soviet Union is voluminous and eclectic, with numerous authors speaking to many subissues in widely differing styles. It is not surprising, therefore, that positions taken in the literature do not always fit snugly into the theoretic analysis. Nonetheless, all positions in the debate have embedded in them aspects of that analysis--advocates (and analysts) are identifiable as to which trade strategy they espouse (or discuss), and their arguments explicitly or implicitly emphasize the twin issues of (1) whether the United States and its allies can affect the price lines of Figs. 2-5, and (2) the extent and importance of Soviet gains from trade. To set the stage for the model of leverage, which attempts to isolate particular areas of controversy (and agreement), this chapter summarizes the best-known positions in the debate in terms of the strategy advocated and the logic or evidence concerning effects on volume, terms, and gains of trade. Of course, in policy debate, political effects of trade are at least as important as economic ones, so this aspect of the various positions taken in the debate is discussed as well.

The U.S. Should Increase (Nonmilitary) Trade with the Soviet Union

Although benefaction has not been a position advocated in recent history, analysts frequently recommend a movement toward "more normal" trade relations with the Soviet Union, to be accomplished by relaxing some of the current restraints on Soviet-U.S. trade. A popular position in the early and mid 1970s, and one that continues to have a large following today, this approach is based on the hypothesis that increased trade with the Soviet Union would be beneficial to the United States. The basis of the benefit is variously cited as (1) increased Soviet restraint in international relations brought about by trade, (2) a diversion of Soviet resources from military to civilian purposes caused by trade, and (3) increased profits and employment for American firms. Advocates of trade for reasons (1) and (2) are arguing in favor of a

generalized form of leverage, one that lacks an episodic character or any specific demands, threats, or promises. Advocates of increased U.S.-Soviet trade who cite the third reason reject all trade strategies except selective military denial;² they are implicitly arguing that U.S. gains from trade are large enough, either in absolute terms or relative to Soviet gains from trade, to justify a strategy of freer trade.

Supporters of increased trade who see it as a way of ensuring more acceptable (from the American point of view) behavior by the Soviets seldom specify a realistic mechanism by which this will occur, nor do they provide empirical evidence. For example, in Congressional hearings concerning the effect of the post-Afghanistan grain embargo on the Soviets, one Senator contended grain trade is in our interest because the Soviets would become more "dependent" on the United States, and "a major country would hesitate to bomb the principal export source of its food supply" (U.S. Senate, Committee on Banking, Housing and Urban Affairs, 1980, p. 13). More generally, the argument is that increased trade will cause increased Soviet "dependence" on the United States and therefore more restrained foreign policy behavior.³

The most obvious link between dependence and Soviet cooperation in foreign policy is the threat of U.S. trade restrictions, but most advocates of increased trade specifically reject their use for political purposes. In the absence of a threat of sanctions, the means by which dependence will lead to cooperation appears to be one of generally inducing increased cooperation by lowering feelings of antagonism and hostility. The view that reduced tensions will derive from increased trade frequently appears as an article of faith in the writings of the mid and late 1970s (see, for example, the report by John Hardt and George Holliday that appears in U.S. House of Representatives, 1973; or D. Yergin, 1977, or Agnelli, 1980).

A second argument advanced by those who favor improved economic relations with the Soviets is that increased Western trade will cause

²In general, writers who advocate increased or "free" trade with the Soviet bloc do not oppose selective denial based on militarily important goods, but they would define quite narrowly the group of exports needing restriction.

³For a broad view of how such interaction between economic and political issues works, see Kissinger (1979) on the general subject of linkage.

the Soviets to reorder their priorities between military and civilian goods, on the contention that the Soviets do not have sufficient resources to both increase exports (to pay for increased imports) and continue the arms race (U.S. House of Representatives, 1973; U.S. House of Representatives, 1977a). This argument is somewhat circular, however: Presumably if Soviet planners choose to increase exports at the expense of military goods, it is because priorities have already changed. Why a change in priorities should be coaxed forth by Western offers of increased trade is seldom specified.

As a digression, it should be noted that the proponents of the view that trade leads to Soviet restraint generally refer to increased "interdependence" but focus on the projected effect on Soviet behavior. These authors do not usually address the effect on U.S. behavior, in particular on the possible policy options open to the United States in dealing with Soviet actions.

The third reason given for increased U.S.-Soviet trade is purely economic. Goldman (1975) focuses on trade from the point of view of the potential exporter; in many ways his is a "how-to" book for the business interested in initiating trade with the Soviets. Friesen (1976), in contrast, gives a national perspective, a succinct summary of the national policymaking process concerning trade in the United States and the Soviet Union. She also discusses the rationale for, and current levels of, East-West trade (including trade between Eastern and Western Europe), and of specific episodes of East-West trade in computers, petroleum, chemicals, and grain. Despite their very different emphases, however, both Goldman and Friesen advocate increased trade with the Soviets and favor a U.S. policy toward Soviet trade separating trade issues from ideological, political, or military issues.⁴ Both base their positions on pragmatic economic grounds of improved balance of payments, profits, and employment. They discuss only the effects of increased exports, and in doing so they implicitly assume U.S. exports will increase more than imports (otherwise the balance of payments would not be improved), and ignore effects on profits and employment in import-

⁴More recently, Goldman has noted that leverage (the use of trade for political purposes) has succeeded on several occasions, and advocates leverage, if it is cautiously applied (see Goldman, 1983).

competing industries. They also discuss only U.S. gains from trade, and so ignore the issue, raised by their opponents, of the distribution of gains from trade between the United States and the Soviet Union.⁵

The U.S. Should Minimize All Trade with the Soviet Union

For two decades following World War II, a popular view of trade with the Soviet Union was that trade should be restricted as far as possible. That view still has some advocates. Depending on the severity of proposed restrictions, this position corresponds either to a strategy of total denial or to one of partial denial generally applied. The hallmark of this position is the desire to restrict all trade--military or nonmilitary, high technology or low--with "the enemy," the Soviet bloc. This position was enshrined in the 1962 amendments to the Export Control Act of 1949, which extended export restrictions from military goods to any good deemed capable of making an important military or economic contribution to the Communist bloc.

By the late 1960s and early 1970s, with the beginning of detente, the emphasis in U.S. policy circles changed to one of control only over militarily important exports,⁶ but some analysts continue to believe in the general inadvisability of trade with the Soviet Union. In a three volume study of Western exports and Soviet economic development from 1917 to 1965, Anthony Sutton concludes that Western exports have been, and continue to be, the most important factor in Soviet economic development. Indeed he believes that no sector of the Soviet economy could have achieved rapid growth without imports of technology and capacity from the outside world (Sutton, 1973, pp. 381-402). He finds a willingness to trade with the Soviets to be incompatible with high annual defense expenditures; one policy or the other must be irrational (p. 381). This point of view implies that the Soviet gain from trade is

⁵Whether proponents of increased trade with the Soviet Union believe the issue of the division of gains from trade it is irrelevant, or relevant but that the United States captures most of the gain, is not clear in these writings.

⁶In 1969, the Export Control Act was replaced with the Export Administration Act, whose purview is to restrict only goods with military applications; all mention of the economic importance of exports to communist countries was eliminated.

large (and the U.S. gain from that trade is small).⁷ Sutton's argument also implies that the United States (in cooperation with its allies) has the power to force the Soviet Union to a point at or near the autarkic equilibrium of Figure 1.

Many analysts disagree with Sutton's evaluation of the general importance of imports to the Soviet economy--see, for example, Desai (1979), Holzman and Portes (1978), or T. Wolf (1979)--although most agree at least that imports have played key roles in certain sectors of the Soviet economy. Recently, the issue of the importance of foreign trade to the Soviet economy has been revived by a paper by Trembl and Kostinsky (1982), which simply discusses the size of the Soviet foreign trade sector, not its role in the economy nor the vulnerability of the economy to trade sanctions. The authors conclude that in 1972 Soviet participation in trade (relative to national income) was two to three times higher than other researchers believe--a finding that others have cited as an indication of Soviet gains from trade and vulnerability to trade sanctions.

Sutton and those who base their arguments on Trembl and Kostinsky's work argue for general trade restrictions because of the magnitude of Soviet gains from trade. In addition, a strain in the literature supports denial policies regardless of the size of the gains, on the basis that *any* Soviet gain from trade is too much. In recent years, however, the reasons previously used to support general export restrictions--that pain and dislocations in the Soviet Union will result--have instead been marshalled in favor of a strategy of leverage.

Technology Transfer

The intermediate ground between advocates of "more normal" trade and advocates of a general denial strategy is occupied by those who prefer a partial denial strategy, applied either specifically to military goods or to all goods. In either case the emphasis tends to be on U.S. exports of "high technology" products. In theory partial denial

⁷Sutton's argument concerning gains from trade is a dynamic one: Forcing the Soviet Union to rely on their own domestic production this year not only will lead to a lower level of consumption this year, but in subsequent years as well, because growth will be more limited than if trade occurred.

is not limited to acting only through high technology products, but in the ongoing debate on economic suasion, discussions of denial policies rarely mention low technology goods. In contrast, the debate on leverage, as we shall see in the next section, incorporates both low and high technology goods--grain as well as gas turbines.⁸

The technology transfer debate is complicated by a lack of agreement on the terms of discussion. Depending on the speaker in the debate, "high technology" is defined in different ways (or, in some cases, left undefined). Explicit or implicit objectives also vary, and may be as ambitious as permanently slowing the growth of the Soviet economy or as circumscribed as maintaining a period of time in which militarily important technological advances made in the United States are not transferred to the Soviet Union. The essence of this disagreement is whether U.S. policy should be generally applied partial denial, or selective military denial.

European members of NATO, who participate in export control of militarily important items through the mechanism of the Consulting Group-Coordinating Committee (COCOM),⁹ in general have a very much narrower conception of which exports it is necessary to control than does the United States.¹⁰ They explicitly propound the view that the appropriate policy is selective military denial and that the definition of military goods should be quite limited.

The U.S. government has fairly consistently argued for a broader definition of military goods, and many analysts argue for the wider

⁸Yet another debate ranges alongside the leverage and technology transfer discussions: the appropriate degree of scientific cooperation between the United States and the Soviet Union. For a discussion of the conflict between the goals of export controls and those of scientific cooperative agreements with the Soviets, see C. Wolf, (1974) or U.S. House of Representatives (1977b).

⁹Established in 1949, COCOM includes all NATO members, less Iceland, plus Japan. It is an informal organization in that it has not been ratified in the national parliaments of the member countries. It maintains a list of items that members have agreed should not in general be exported to the Soviet Union (or Eastern Europe). Much of COCOM's time is spent in dealing with requests for exceptions to the general prohibitions.

¹⁰For a summary of the individual West European countries' East-West trade policies, see Yergin (1980). For the details of the Japanese position, see Sternheimer (1980).

coverage of a policy of partial denial generally applied to all high technology goods. The resulting state of affairs is often confusing, and several commentators have concluded that U.S. technology control policies as they are in fact applied lack coherent objectives and administration (for a general discussion of this point, see Allen and Nimitz, 1978; for a case study approach leading to the same conclusion, see Bertsch et al., 1981).

J. Fred Bucy is perhaps the leading architect of the position that controls should be exercised only over the products of technology that are of direct military importance (Bucy, 1977; U.S. Department of Defense, 1976), and other analysts agree (Mountain, 1978; Madison, 1981).¹¹ The argument is that the purpose of controls is to maintain a period of time in which a given military technology is not available to the Soviets. (No one in the debate contends that new technologies can be permanently kept from the Soviet Union.)

Klitgaard (1974) also advocates specific military denial but would limit trade restrictions to militarily useful goods that the Soviet Union cannot produce domestically. He has presented the following argument in opposition to controls over high technology products in general: To justify export controls on high technology products but not other goods, the controlled goods must be ones that enhance the receiver's capabilities in some ways other than just increased efficiency.¹² If merely slowing the speed or increasing the cost of production is the objective, selective controls on high technology goods will be suboptimal. Rather, trade restrictions on all goods are called for.

This argument assumes that the primary way in which high technology imports influence the level of military production chosen by Soviet leaders is through an effect on the total level of goods and services the economy can produce. Klitgaard does not discuss the fact that

¹¹Bucy and Madison, although in favor of export controls to protect military technology, decry the use of trade as a political weapon. They would therefore oppose partial denial generally applied, and leverage.

¹²In specifically addressing one product category, large computers, Klitgaard finds it doubtful that imports do indeed fit in this special category of allowing the Soviets to accomplish new tasks. Rather, they merely allow the Soviets to accomplish certain tasks more rapidly and at lower cost.

imports also affect the scarcity of high technology products relative to other goods in the Soviet economy. If the military sector is an especially heavy user of high technology products, then this relative scarcity effect will cause military production to be more expensive in real terms than before, which may cause Soviet leaders to settle for less military production. Thus the cogency of Klitgaard's argument for restricting trade only in those military goods that the Soviet Union does not produce depends on whether the resource enhancing effect or relative scarcity effect is more important, an issue that has received little attention in the literature.

In opposition to Bucy, Klitgaard, and others who advocate various kinds of selective military denial are analysts who urge export controls on all high technology products, regardless of military use (and regardless of whether the technology is merely resource enhancing). The concern inherent in this approach is not with the effect of imports directly on military capabilities, but with the effect on the entire Soviet economy. Stemming mainly from generalized national security considerations (e.g., M. Miller, 1978), as well as from concern over future international trade competition (e.g., Baranson, 1976), these issues have been reflected in Congressional discussion of the transfer of nonmilitary technology (U.S. House of Representatives, 1978 and 1979; U.S. Senate, 1975 and 1980).

Obviously a crucial issue in evaluating the case for restricting all high technology exports is the importance of such imports to the Soviet economy. Most people apparently believe the effect has been small, either because the total volume of imported capital is small (M. Miller, 1978; Holzman and Portes, 1978) or because the Soviets lack the ability to assimilate and diffuse imported technology except in such high priority sectors as the military (Gustafson, 1981).

A minority opinion is that imported technology is important to Soviet economic growth, at least in some key sectors of the economy. Green and Levine (1977) have concluded imported equipment is very important to Soviet growth. They use a disaggregated macroeconomic model of the Soviet economy to reach this finding. John Hardt and George Holliday of the Congressional Research Service rely on a less

formal approach to reach the same conclusion (U.S. House of Representatives, 1977b).

Overall, there is some agreement that in sectors of great importance to Soviet planners, imported technology can be used to avoid some of the worst consequences of Soviet economic inefficiency. There is little agreement on the effect this has on the Soviet economy as a whole, or on Soviet military power. Perhaps the best summary of the ongoing controversy over the importance of imports to the Soviet Union is provided by Hanson (1977), who concludes that, although some macroeconomic calculations (in particular, Green and Levine's work) suggest a substantial benefit from imports, anecdotal evidence (especially on the topic of the Soviets' frequent inability to disseminate technological advances) suggests otherwise. His conclusion that there is continuing uncertainty on the subject is unsatisfactory but accurate.

U.S. Trade Sanctions Are an Ineffective Lever

If Soviet imports of high technology goods do not much affect the Soviet economy, then attempts to restrict U.S. exports of such goods as a way to influence specific Soviet actions will fail. This is one argument advanced by the opponents of leverage. Another is that the United States by itself has little monopoly control over imports desired by the Soviets, high technology or low, so in the absence of coordinated action by the industrialized countries, there can be no effective leverage. A concerted action is seen as either extremely unlikely or extremely costly in terms of strains in relations among allies.

Alec Nove (1978) and Philip Hanson (1981) have written two of the more thoughtful books appearing recently on the general issues of East-West trade, and both authors have somewhat reluctantly concluded that, although leverage could be successfully and usefully exerted if there were coordinated Western action, such action is unlikely. They believe U.S. attempts to apply leverage unilaterally will not work, because U.S. goods would be replaced from other sources. This position is supported by others who use specific examples of cases where a product denied a U.S. export license is replaced by a very similar

product from another NATO country (see Bertsch et al, 1981, or U.S. House of Representatives, 1981).

Additional imports also may be forthcoming from non-NATO nations. Examples of embargoed imports from the United States being replaced by non-NATO sources are especially common in discussions concerning food (see U.S. Senate, 1980). Robert Paarlberg (1978) argues that food embargos, including recent ones, are ineffective, offering as evidence the level of food imports and exports by various non-NATO countries whose grain could replace U.S. shipments. Von Amerongen (1980) makes a more general argument that historically embargoes have never succeeded in their political aims, and attributes this to overestimation of the foreign trade dependence of the target nation, as well as to gaps in the embargo. Knorr (1975) makes the same argument and provides evidence: He reviews 25 historical instances of leverage, 17 of which involved the United States. He concludes that, except in four cases with unusual circumstances, leverage either failed outright or its effect was ambiguous.

Finally, it may be that imports from the United States can be replaced by Soviet internal production. Noting that the strategic embargo of the Soviet bloc after World War II was unsuccessful because Soviet domestic production at least partly made up the difference, Knorr (1975) concludes the Soviet military sector became more self-sufficient than it would have been otherwise. Knorr does not examine whether that sector was smaller than it would have been otherwise.

Whether alternative sources of supply, domestic or foreign, are common enough to make leverage ineffective is difficult to judge. In addition, the fact that the initial approach is made to a U.S. company indicates that the United States is a preferred source of supply. Finding a non-U.S. substitute limits the damage done by the U.S. refusal, but it does not necessarily mean no damage has occurred.

Some analysts agree that economic sanctions will not work, but for political, not economic, reasons: Even with effective monopoly control over "important" Soviet imports, U.S. attempts to exert leverage will not work because nations resist changing any important policy in

response to external pressure. Holzman and Legvold (1975) and Knorr (1977) make this point; they add that both sides may successfully demand political concessions in return for improved economic relations but only if the concessions are minor. Unfortunately, although both papers provide useful discussion of economic and political dimensions of East-West trade issues, they present little evidence for the conclusions concerning leverage; the arguments appear based on conviction rather than evidence.

In a review of the concept and historical use of linkage, John Hamilton (1981) agrees with Holzman and with Legvold and Knorr. He feels that, at least if done publicly, linkage will not work because "a sovereign nation cannot publicly yield to another except under rare circumstances" (p. 130). Hamilton also points out that linkage provokes domestic protests. The behavior of the U.S. farm community during negotiations for the 1975 U.S.-USSR Grain Agreement, and in the 1980 Afghanistan sanctions involving grain, is frequently cited in support of this view (Sonnenfeldt, 1979; Paarlberg, 1978; Porter, 1981). More generally, interest groups both within and outside the federal government may stymie effective use of leverage (e.g., see Krasner, 1977).

Although the political problems with the application of leverage are well documented, at least with anecdotal evidence, not everyone accepts the implication that this activity makes leverage an unworkable strategy. Some analysts cite historical precedents for the success of sanctions.¹³

U.S. Trade Sanctions Are an Effective Leverage Tool, or Could Be

Although a leverage strategy can use either trade sanctions or trade rewards as tactics, in fact most historic attempts to use leverage have involved sanctions. Thus most efforts at analyzing the historical record of leverage attempts focus on sanctions, and some writers see in the record evidence of the effectiveness of this tool. A larger group

¹³Unfortunately, sometimes both proponents and opponents of leverage claim as "evidence" the same historical incident. This will be discussed in more detail below.

of writers argues that, although ineffective in the past, sanctions would be effective if the United States would only use them properly.

In discussing Soviet perceptions of the reasons for, and barriers to, U.S.-Soviet trade, Marshall Goldman (1979) cites several examples of what he considers to have been successful leverage: U.S. trade sanctions and rewards led to a lack of fiercer opposition to the U.S. bombing of Hanoi in 1972, to increased emigration of Soviet Jews in 1973-74 and 1978, and to the Soviets' "low political profile" during Kissinger's 1975 negotiations on the second Israeli withdrawal in the Sinai.

Following the 1980 imposition of sanctions in reaction to Soviet actions in Afghanistan, observers both within the administration and outside it argued that the sanctions successfully deterred the Soviets from further aggression (see the testimony reported in U.S. House of Representatives, 1980).¹⁴

Unfortunately, there is disagreement as to whether sanctions have achieved their objectives in many of these cases, even less agreement about which cases embody special circumstances unlikely to be repeated. This particular controversy is neatly sidestepped by those who make no reference to history but merely argue that sanctions would work if used properly: Huntington (1978) believes that imports from the United States during the 1970s have had a small but real influence on the growth rate of the Soviet economy, and that to retain this benefit the Soviets will respond to consistently and quietly (not publicly) applied leverage. But to apply leverage effectively, the United States must (1) centralize control over East-West trade; (2) revise export control law so that validated licenses are required for all important exports to the Soviets, regardless of whether the product has a military use; (3) use export credits (as well as exports of goods and services) for leverage; and (4) develop the institutional means to coordinate our trade policies with our allies. Other analysts have other specific suggestions but

¹⁴A complete, detailed description of U.S. actions taken in response to the Afghanistan situation, and a discussion of the degree to which the Soviets found alternative sources for embargoed U.S. exports, appears in several reports prepared for Congress. See, especially, U.S. House of Representatives, 1981.

agree that carefully applied export and credit policies could successfully exert economic pressure for political concessions (e.g., Levine, Rushing, and Movit, 1979; Schneider, 1976). The problem the sceptic has with this line of argument is the impossibility of empirical verification.

A variant of the argument that economic sanctions could, if used properly, cause the Soviets to modify their behavior is the linkage or "strategic leverage" approach. Made explicit during the Kissinger-Nixon diplomacy of the late 1960s and early 1970s, this approach argues that Soviet policies can be affected by a general strategy of linking progress in one arena with actions in another--progress in settling the Vietnam war is made a condition for advances in economic relations in 1969-70, for example. Kissinger discusses this strategy in the first volume of his memoirs (Kissinger, 1979, pp. 129-138). Use of this type of leverage-by-linkage may be seen either as an adjunct to specific sanctions in specific circumstances (Simes, 1980), or as a more effective alternative to specific sanctions (Sonnenfeldt, 1979). The virtues of linkage in the abstract like the virtues of restricting exports of military technology, are attested to by all. Sharp disagreement develops in practice over which arenas should be linked, and how closely.

ANALYTIC FRAMEWORKS

Several researchers have suggested general approaches to be used in judging what trade strategy to follow, and tactics to be applied in particular circumstances. There is general agreement over the appropriate framework: Sanctions should be used when their benefits outweigh their costs. The reckoning of costs usually includes business opportunities forgone (by U.S. businesses), and ill will generated (both among our allies and between East and West).¹⁵ The appeal to some sort

¹⁵Some of the literature evaluating the strategic embargo of the 1950s and early 1960s suggest another cost not mentioned in the more recent debate: Sanctions, if applied to all Soviet-bloc countries, may help the Soviet Union maintain its hegemony over Eastern Europe (Adlar-Karlsson, 1968; Spulber, 1968; Wilczynski, 1969).

of benefit-cost analysis has been made in a number of ways (e.g., see Carswell, 1981/82; Klitgaard, 1974; Plaut, 1981; Von Amerongen, 1980). The most sophisticated and complete statement is presented by Thomas Wolf (1973, 1982a), who uses standard economic analysis to discuss tradeoffs between "national security" and "gains from trade." Unfortunately, no one yet has found a way to measure "national security." Although Wolf's attempt is an interesting exercise and an aid to logical thinking, it shares a fatal flaw with other writings of this type: None suggests a way to identify, nor a metric with which to measure, benefits and costs. In the absence of a way to make the comparison, the exhortation to weigh benefits carefully against costs rings somewhat hollow.

REASONS FOR LACK OF PROGRESS

Arguments over trade strategies in general and economic leverage in particular have been protracted and voluminous. Why, then, has there been so little progress made toward generally agreed propositions? Obviously, part of the answer lies in the circumstance that different analysts focus on somewhat different issues: trade in general versus trade in high technology products, the effect of selective sanctions applied to achieve specific goals versus "linkage" of a more general kind, etc. However, several attributes of the ongoing debate make convincing expositions unlikely regardless of the facet of trade strategy under discussion.

First, and perhaps most difficult to rectify, is the lack of any consensus over the historical evidence. Because all sides of the debate disagree on the results expected from the use of leverage, they cannot agree as to which instances were successful.¹⁶ In general terms, of course, there is little disagreement: Effective leverage causes a Soviet political or military action that is desired by the United States and that would not have occurred in the absence of leverage. The difficulty lies in identifying the desired specific objective. With the 1980 grain embargo, for example, it was not clear whether the objective was Soviet troop withdrawal from Afghanistan, Soviet restraint in other

¹⁶Indeed, one of the barriers to the effective use of leverage in general may be an inability to choose among possible leverage demands.

parts of the world, or merely the sending of a message that would underline the extent of U.S. disapproval. In addition, in any analysis of an historical incident there is room for disagreement in the choice of a counterfactual--that is, in the judgment of what would have occurred in the absence of economic sanctions or rewards.

Disagreement over the appropriate counterfactual is perhaps the most common reason why, for most specific historical instances of leverage, there are analysts who believe the leverage worked and those who believe it did not. (Complicating the situation are those who believe leverage did not work, but would have if it had only been used correctly.) Even if both sides agree on what in fact happened after the leverage was exerted, interpretations of what would have happened in the absence of leverage differ markedly. The judgment as to whether a change in Soviet action was caused by leverage obviously hinges on this issue, and usually the only basis for choice between counterfactuals is one's prior beliefs or the eminence of the analyst. Because there are eminent analysts on all sides of the debate, the choice tends to depend solely on prior belief, and thus debate leads to no objective resolution.

A few examples may help illustrate this point. The Jackson-Vanek Amendment, passed in 1974, linked granting of most-favored-nation tariff status to emigration policy in an effort to influence Soviet decisions on Jewish emigration. Some analysts argue this linkage was successful, citing the increase in Soviet emigration in 1973-1974, when the amendment was being debated (see, for example, Goldman, 1979 and 1983). Others label this attempt at leverage as a failure, noting the Soviet rejection of the trade agreement to which the amendment was attached, and arguing that the emigration occurred in spite of, rather than because of, the Jackson-Vanek Amendment (Klinghoffer, 1981). Similar disagreement surfaced after the imposition of sanctions caused by Afghanistan. Proponents of leverage claimed success, arguing the Soviets were restrained from further moves by the sanction and that the sanctions "punished" the Soviets for their actions. Those with little faith in leverage note that the Soviets did not withdraw from Afghanistan and argue that their actions in other spheres were unaffected (for examples of both sides of the issue, see U.S. Senate

1980, and U.S. House of Representatives 1981). The judgment of success or failure depends on a hypothetical "what would have been otherwise," which is not specified before sanctions are imposed and is not obvious. The arguments presented ex post take on an air of being selected and molded to fit the predilection of the analyst; they are unlikely to convince the sceptical.

Another pervasive problem appearing in the debate over the effectiveness of linkage or leverage is the difficulty of attributing a Soviet action or policy change to a specific U.S. threat or promise. Economic sanctions are not used alone but as part of a package of actions. Diplomatic protests in bilateral and multilateral forums, military moves of some sort (if only putting troops on alert), official warnings of endangerment of progress in U.S.-Soviet relations in other negotiations, all occur at the same time as embargoes and other export or credit restrictions. The difficulty of attributing any Soviet response to a single U.S. act is obvious; the more cautious refuse to try.¹⁷ Carried to its logical extreme, this problem becomes insoluble. The effect of U.S. action in the economic arena will always in some way be affected by action on other fronts, if only by impinging on Soviet perceptions of U.S. priorities and objectives. At some lesser and more meaningful level of abstraction, it is conceptually possible, but in practice difficult, to separate the effect of economic sanctions from simultaneous other actions. If any one action among many is to be designated as "most important" or "most effective," the choice tends to depend on the judgment of the analyst. Once more we are left with the impression that the predisposition of the researcher rather than the weight of "evidence" molds the conclusion.

Finally, the debate over leverage has been muddled by unresolved questions of fact to which answers may prove elusive. How dependent on imports is the Soviet Union? When the U.S. sanctions are imposed, how often are exports from other nations substituted? Several examples of

¹⁷Simes (1980) is among those who discuss Soviet reactions in specific cases where sanctions are applied in the context of sanctions as only one of many of a complex set of actions. Sonnenfeldt (1979) takes the same approach at a more general level by advocating "strategic linkage," in which policymakers realize all issues--economic, military, and political--are interrelated and cannot be addressed separately.

disagreement on the first question have been discussed; the post-Afghanistan grain sanctions provide a case in point for the second. There are widely varying estimates of the net effect on Soviet imports, after allowing for substitution of grain from other sources (for examples, see U.S. Senate, 1980). Similarly, the question of the degree to which exports denied validated licenses in the United States are replaced by exports from other industrial countries is also unresolved, although reports of individual instances of substitution abound.

CONCLUSIONS

The interlocking debates on leverage, sanctions, and technology transfers are unsatisfying because arguments and logic are repeated (in less and more convincing ways) with no real advances made toward agreement. The current arguments, and currently used types of evidence, are unlikely to have much appeal except to the already convinced. Given its present form, progress does not seem likely. Ideally what is needed is a structure for the debate in which all sides agree that a specified observable result supports one position or refutes another, but this is a counsel of perfection. More realistically, new approaches to narrowing and focusing the debate would be useful.

A framework for such an approach, a model of leverage that disaggregates the actions and influences involved in any attempt to use economic power to alter the political decisions of a trading partner, is the subject of the next chapter.

IV. A MODEL OF LEVERAGE

There is a twofold objective in developing a simple model of leverage. First, the model will extend the general theoretic approach of Chapter II by providing a more concrete and detailed picture of how leverage works. Second, it will permit systematic examination of some of the areas of controversy in the debate concerning the effectiveness of leverage.

Even the simple model of leverage presented here involves many variables, each of which has some direct effect on the final outcome of an attempt to use leverage. In addition, many of the variables are interdependent, even ignoring long-term feedback effects between leverage outcomes and the state of the world.

The large number of variables and their interconnectedness reflect the complexity inherent in leverage. This complexity has led to the tendency in the literature for advocates of opposing positions to talk past each other, with different authors in effect addressing a different subset of the components in the model presented below. The value of the model in these circumstances is not that it lends itself to manipulations from which will flow "answers," but rather that it allows us to disaggregate the circumstances influencing application of leverage and the way in which they affect the leverage attempt. Systematic examination of the individual aspects may permit separation of areas of controversy from areas of agreement and suggest ways to resolve some of the controversy. Some areas of disagreement will be beyond the scope of the model, and others will appear in the model but with no apparent method of resolution. Nonetheless, the model will be useful if it narrows the scope of disagreement and points the way to new, potentially more useful ways of discussing the issues involved in leverage.

THE STRUCTURE OF THE MODEL

The essence of the model is disaggregation. To better examine how leverage works, and thus to better analyze how likely it is to succeed, we first examine the environment in which the leverage attempt is embedded. Within this environment, and faced by some Soviet action or

policy that they would like to see changed, U.S. policymakers decide whether and how to apply leverage. These decisions, and the environment itself, influence the actions of U.S. allies and other actors in the international system. All of these aspects of the leverage attempt influence its outcome, which has at least two important dimensions: whether Soviet action or policy changes in the desired way, and the costs of having made the leverage attempt.

Figure 6 shows the various components of the model. The interconnections among components are complex, but in general, the most direct connections run between each component and the ones below it, as shown by arrows in the figure.

The top level of Figure 6 consists of the aspects of the environment in which the leverage attempt takes place. These are circumstances that may be regarded as fixed in the short run--supply and

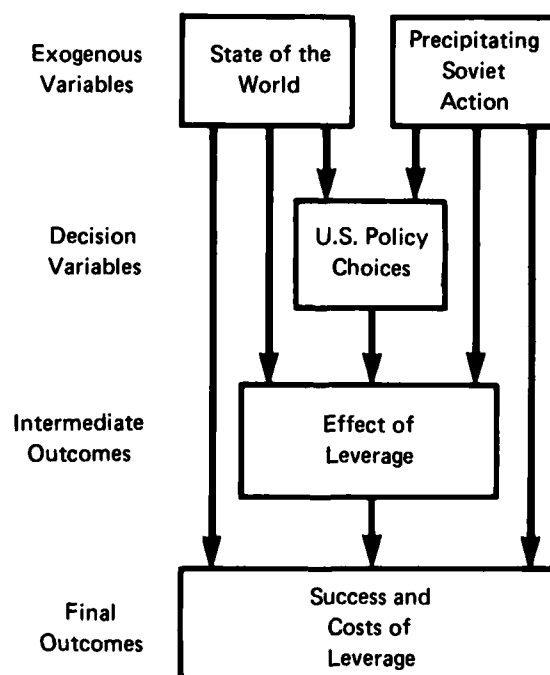


Fig. 6 -- The components of a model of leverage

demand conditions in international markets, the state of political relations in the Atlantic Alliance, etc. These circumstances may change in the medium and long run, and in the longer run they depend in part on U.S. policy choices concerning the use of leverage (the attempt to enforce an export embargo on turbines destined for the Soviet gas pipeline had a lasting effect on the degree of unity within the Atlantic Alliance, for example). At the time of an individual attempt to apply leverage, however, these factors may be taken as given--as exogenous variables. The model also takes as given the Soviet action or policy that triggers the attempt to apply leverage.

All other components in the model are influenced by the exogenous variables defining the environment and the trigger action. Some of these variables are decision variables, directly under U.S. control. Others may be regarded as representing intermediate outcomes in the process of applying leverage. Both the sensitivity of the Soviet economy to U.S. trade policies and the credibility of the threats or promises made, for example, are influenced by the initial environment and by U.S. policy choices. The degree of sensitivity of the Soviet economy will in turn influence the final outcomes--the probability that the attempt at leverage will succeed, and the cost of the attempt.

The model and the interconnections among the components can be most simply expressed in mathematical terms:

Exogenous Variables:

- ECONSTATE = a vector of variables defining the economic state of the world
- WESTSTATE = a vector of variables defining the general political situation in the United States and within the Atlantic Alliance
- EWSTATE = a vector defining the political relations between the United States and the Soviet Union and between Western Europe and the Soviet Union
- TRIGGER = a vector defining the characteristics of the Soviet action or policy that has caused the attempt to apply leverage

Decision Variables:

USPOLICY = a vector defining the characteristics of the policy applied in the leverage attempt

Intermediate Outcome Variables:

SOVSEN = the extent to which the economy of the Soviet Union is sensitive to a threatened sanction or a promised blandishment

CREDIBLE = the Soviet judgment of how likely the United States is to proceed with the threatened (or promised) trade action.

ALLIEDCOOP = the degree of cooperation given a U.S. leverage attempt by other countries in the Atlantic Alliance

OTHERCOOP = the degree of cooperation given by other (non-Soviet bloc and non-NATO countries).

Final Outcome Variables:

SUCCESS = the probability that the attempt to apply leverage will succeed in achieving its avowed objective

COST = a vector defining the political and economic cost of a particular attempt to use leverage

All of these variables are discussed in more detail below. Using the convention that $f(\)$ means "is a function of" or "depends on", our model posits that the following relations among variables are true:

USPOLICY = $f(\text{ECONSTATE}, \text{WESTSTATE}, \text{EWSTATE}, \text{TRIGGER})$

SOVSEN = $f(\text{ECONSTATE}, \text{USPOLICY})$

ALLIEDCOOP = $f(\text{ECONSTATE}, \text{WESTSTATE}, \text{EWSTATE}, \text{USPOLICY}, \text{TRIGGER})$

OTHERCOOP = f(ECONSTATE, EWSTATE, USPOLICY, TRIGGER)

CREDIBLE = f(ECONSTATE, WESTSTATE, EWSTATE, USPOLICY)

And,

SUCCESS = f(USPOLICY, SOVSEN, ALLIEDCOOP, OTHERCOOP, CREDIBLE)

COST = f(ECONSTATE, WESTSTATE, EWSTATE, TRIGGER, USPOLICY)

The model assumes that the result of a particular attempt to apply leverage can best be judged in terms of its probability of success and its cost. Both are related to the exogenous variables, but in different ways. The exogenous variables of the model affect SUCCESS only indirectly, through their influences on decision variables and on intermediate outcome variables. For example, the economic state of the world--the international availability of grain, Soviet trade dependence in machinery, etc.--affects the success of leverage only indirectly as they affect the economic vulnerability of the Soviet Union. COST, however, is directly as well as indirectly influenced by the exogenous variables: The importance of U.S. grain exports will directly influence the cost of a grain embargo and will affect the policy decisions on how long (for example) to maintain the embargo. The policy decision on the length of the embargo then affects the cost of the leverage attempt.

Only the more important aspects of the exogenous variables will be considered here. The dependent variables (decision and outcome variables) may well depend on other factors, but a restricted number of issues will keep the model at least somewhat tractable. The framework and usage of the model would not change, however, if it were expanded to include more dimensions.

THE VARIABLES

The variables of the model fall into three conceptual categories: exogenous variables, decision variables, and outcome variables.

Exogenous Variables

The exogenous variables of the model can be grouped into those that concern the economic state of the world, those related to the political state of affairs in the United States and between the United States and its allies, those concerning the political state of affairs between the East and West, and those that define the Soviet action or policy that is the triggering force in the leverage attempt.

The selection of precisely which factors to include in the first group, the vector of variables that constitute ECONSTATE, depends to some extent on the particular type of leverage instrument that is contemplated. If an export embargo (e.g., grain or pipeline equipment) is being considered, then the number of alternate suppliers of the good located outside the Soviet bloc, or outside the Atlantic Alliance, is important, as is the presence or absence of close substitutes for the product to be embargoed, the Soviet import-to-consumption ratio in the imported good, etc. Also important is the level of unemployment in the affected sector in the United States and in allied nations. If the action is a boycott of imports of a certain type from the Soviet Union or Soviet bloc countries, parallel considerations apply. Somewhat different factors are important, however, if the action is to restrict (or expand) export credits. Here general economic conditions in the non-Soviet-bloc countries (the overall level of unemployment, for example) and the international financial position of the Soviet Union (e.g., the level of hard currency reserves) become important.

In general, proponents and opponents of leverage can agree on the values of the variables measuring the economic state of the world, which lend themselves to measurement and often are continually tracked in national statistics (e.g., unemployment, balance of payments). In the literature, opposing sides in the leverage debate differ more as to which subset of economic variables is discussed than about the value of any specific variable. Thus, those who counsel against leverage most frequently cite figures on alternative sources of supply (e.g., Argentine grain), and unemployment (or low profits) in export industries (e.g., the agricultural sector of the United States), whereas those who

favor leverage cite the trade dependence of the Soviet Union on grain. Or the two sides may agree on the subset of interest (e.g., the number of alternative suppliers) but disagree as to appropriate measures (whether to count all non-U.S. grain exporters, or only non-NATO suppliers).

In effect, this latter disagreement reflects implicit differences in the judgment of the degree of Allied or non-Allied cooperation that can be expected in a specific leverage attempt. The value of the model in the midst of such a debate is the following: (1) It forces advocates of various positions to recognize the full set of relevant economic variables; and (2) it explicitly recognizes that third-party cooperation is a distinct aspect of leverage attempts, whose analysis is necessary but conceptually separate from and affected by different variables than the economic state of the world.

The political state of affairs within the United States and between the United States and its allies in Western Europe and Japan (WESTSTATE) is a vector whose components are less easy to identify, and much more difficult to measure, than the ECONSTATE vector. The most important aspect of the political scene is perhaps the general level of support enjoyed by the U.S. administration, both domestically and internationally. In particular, the outcome of an attempt to apply leverage will be influenced by the degree of consensus on general policy goals (of all types, not only those related to trade policy) within the United States and between the United States and other members of the Atlantic Alliance.

The state of political relations described by the WESTSTATE variable is that existing before a specific attempt to apply leverage. During the course of a leverage episode, relations will change depending on U.S. leverage policies (and European policy reactions). In the structure of the model, however, these changes enter the analysis through the degree of allied cooperation (ALLIEDCOOP), rather than as part of the exogenous variable WESTSTATE. For example, the aspects of U.S.-European relations to be examined when contemplating the sanctions imposed after Poland declared martial law are those relating to the congruence of views between President Reagan and European leaders in

late 1981. The intra-Alliance ill will generated by the attempt to enforce the sanctions on European subsidiaries and licensees of U.S. companies would not be part of the exogenous variable WESTATE, but rather part of the outcome (COST). Thus previous conditions are conceptually separate from conditions that arise because of the decisions made by policymakers in the course of applying leverage in a specific instance.

Similarly, the state of East-West political relations is an exogenous variable in the model (EWSTATE) and so refers to relations before the episode under consideration. The aspects of the relation that will most influence the probability of success and the cost of an attempt at leverage are the general level of hostility (or cordiality) between the United States and the Soviet Union and between other Atlantic Alliance countries and the Soviet Union. Also important is the existence of any other negotiations on East-West cooperation planned for the near future (e.g., arms control talks).

The last category of exogenous variables is TRIGGER, the vector of factors that define the Soviet action or policy that is the immediate cause of the leverage episode. As with the WESTSTATE and EWSTATE variables, these factors are somewhat amorphous and difficult to measure. Conceptually they include the novelty of the Soviet action or policy (the extent to which it is a departure from past policies), and some judgment of the degree to which the subject and geographic location of the action is in the realm of Soviet (or U.S.) vital interests. Thus leverage was more likely to be a success in affecting Soviet actions in Afghanistan than in Poland, because Afghanistan is less central to Soviet security and because a Soviet invasion in Asia has fewer precedents than intervention in Eastern Europe.

U.S. Decision Variables

The USPOLICY variable defines U.S. policy choices made during the course of a specific attempt to apply leverage. This vector of factors includes the importance of the demand made of the Soviets as a condition of avoiding the threat (or reaping the promise) made in the leverage attempt, the envisioned scope of the threat or promise made (is an embargo to be applied by the United States alone or by all NATO nations,

is it to apply to many export products or few, etc.), the consistency with which the United States pursues its objectives once the attempt has been launched, and the degree of national and international publicity attendant to the attempt.

Intermediate and Final Outcome Variables

The model has two different kinds of outcome variables, intermediate and final. The first intermediate outcome variable, SOVSEN, refers to the Soviet economy's vulnerability to the economic pressure of a leverage threat to restrict trade, or potential benefit from a leverage promise to expand it. The sensitivity of the Soviet economy depends on the economic state of the world and on certain aspects of U.S. policy decisions (e.g., the scope of an embargo policy).

SOVSEN and the three other intermediate outcomes variables--the degree of allied cooperation (ALLIEDCOOP), the degree of third-party cooperation (OTHERCOOP), and the perception that the United States is "serious" (CREDIBLE)--are not directly measurable. For the purposes of this modeling effort, each variable should be thought of as having three or four alternative states: The Soviet economy may be very sensitive to the leverage action threatened or promised, or it may be moderately sensitive, or insensitive. Similarly, the Soviets may judge the United States is very likely to make good on its threat or promise (a high value for CREDIBLE), or they may feel the United States would find it quite difficult to follow through. In both examples, "high" and "low" are not subject to calibration but nonetheless are useful aids to thought.

The final outcome variables of the model are the probability that the objective of the leverage attempt will be achieved (SUCCESS),¹ and the cost of the attempt (COST). SUCCESS basically has one dimension--how likely are the Soviets act as desired? COST has several dimensions, both economic and political. The domestic economic cost can be measured in terms of losses from forgone trade.² The domestic political costs

¹This variable assumes that there is an agreed-upon objective in an specific leverage attempt. This, however, may be a questionable assumption.

²There are international economic costs as well, but in this model they enter only as they affect ALLIEDCOOP or OTHERCOOP.

are less easily measured but obviously exist in the form of lost support or increased domestic opposition to other political goals. The international political costs center on damage done to U.S. relations with other members of NATO, or with Third World countries. Both final outcome variables, like the intermediate outcome variables, should be thought of as having three or four possible values ranging from "high" to "low."

One aspect of the domestic economic cost of a trade-related action needs to be reiterated. Discussions of trade sanctions often assume that the cost of any unsold exports (for whatever reason) is the sales value of the product, and that all jobs lost because of forgone exports are a net loss to the domestic labor force. Matters of double counting aside,³ this reasoning is incorrect. Only the net change in gains from trade should be counted as an economic benefit of trade, or the loss if trade is restricted. In real terms, the total net loss from a refusal to export to the USSR is the loss in efficiency that results when the U.S. economy as a whole produces less of the export good(s) and more of the import-competing good(s). This net loss is less than the value of the U.S. exports not shipped, just as the net number of jobs lost is less than the number of people no longer working in the export industry. How much less depends on how complete is the adjustment to changed trade conditions.

If there is total adjustment--so that there is the same amount of unemployed resources after the change as before, the net cost is a loss of the gains from trade examined in Chapter II. This loss is far less than the value of lost trade. In the limit, if none of the resources previously used in supplying goods to the Soviet Union are switched to production for other markets or other goods, the conventional wisdom is correct and the net cost indeed approaches the full sales value of the lost trade.

The use of an incorrect concept of the cost of an embargo does not change qualitative discussions of leverage, because the factors that increase the true economic cost of leverage also increase the cost as calculated using the incorrect approach. But the magnitude of the

³To count both the sales price of the export and the number of jobs involved in producing it double counts the value of the labor.

economic cost of an embargo or an export restriction is much less than that commonly cited by those who fail to distinguish between true costs and the sales value of exports.

TRACING THROUGH EFFECTS ON FINAL OUTCOMES

The model described above is a simple one, but it provides a way of categorizing some of the numerous different issues that arise in any discussion of leverage. This section uses this categorization of the factors that affect leverage, and of the interrelations among them, to explore some of the consequences for the final outcome variables of alternative possible economic and political situations.

The Effect of Individual Variables

The model posits that the exogenous variables, which describe the state of the world when a leverage attempt begins, influence the outcome of the attempt both directly and through the way they affect U.S. decisions about how to apply leverage. This section summarizes the more important effects of the exogenous variables on these decisions and the effects of those decisions, and of the exogenous variables themselves, on intermediate and final outcome variables. The summaries appear in Tables 1-4; selected important cases are marked with an asterisk.

Each row in the tables is designed to be independent of all other rows. That is, the entries in any single row assume no other factors change. The tables should all be read in the following way: Reading across any row gives the effect of an exogenous variable on the variable indicated by the column heading. It may be positive (+) or negative (-) or there may not be much of an effect (0). Considerable uncertainty as to the effect of the exogenous variable is indicated by a question mark a question mark (?).

Table 1 summarizes the effect of exogenous variables on selected dimensions of USPOLICY, the vector describing the manner in which the United States implements its leverage attempt. Thus the first line in Table 1 indicates that the presence of many substitute suppliers or products will tend to reduce the frequency with which a country attempts leverage and the importance of the concession demanded. Both effects are because of the weak bargaining position that exists when many

Table 1

EFFECTS OF THE STATE OF THE WORLD ON U.S. POLICY

Exogenous Variable	Frequency of Leverage Attempts	Consistency of Follow-Through	Importance of U.S. Demands	Likelihood of Using the Carrot Instead of the Stick
<i>ECONSTATE</i>				
* Large number of substitute suppliers or products	-	0	-	+
High U.S. unemployment	-	-	?	+
Healthy state of U.S. balance of payments	+	+	+	?
<i>WESTSTATE</i>				
* High level of domestic support for U.S. administration	+	+	+	0
<i>EWSTATE</i>				
High level of tensions, US-USSR or W. Europe-USSR	+	+	+	-
High level of "reverse leverage" is available to the USSR	-	-	-	+
<i>TRIGGER</i>				
Action is close to Soviet vital interests, further from U.S. interests	-	-	-	0

* Cases discussed in the text.

alternative sources of supply exist. Thus, in 1973 when major Arab oil producers reduced exports to induce European support for a U.N. resolution urging Israeli surrender of occupied territory, the paucity of alternative suppliers contributed immeasurably to the result: The affected countries complied.⁴ In contrast, the availability of alternative grain exporters no doubt weakened the chances of the American attempts at leverage in the case of the Soviet invasion of Afghanistan.

Generally speaking, the logic inherent in each row of the tables is reasonably self-evident, although not necessarily unassailable. The entries that are not question marks are generally agreed upon in the literature, usually because there is a clear relation between the value of an exogenous variable and one of the following issues: (1) whether an embargo type of action is politically acceptable, (2) whether an embargo would in fact change Soviet access to the good, and (3) whether access to the good is important to the Soviet economy.

Consider, for example, the WESTSTATE variable in Table 1--the level of domestic support enjoyed by the U.S. administration. If the administration has a high level of general support, then it has more maneuvering room in which to attempt leverage. That is, it will be politically more able to take an action that will hurt some domestic groups, in pursuit of a national goal (the Soviet concession sought). All else being equal, the frequency with which leverage is applied will increase with domestic support because leverage is less costly in such a situation. Also, with a high level of support, the U.S. administration will have a firm political base for follow-through, increasing the probability of a consistent effort. In addition, the firm base means stronger demands on the Soviets may be made without engendering as much domestic disagreement as would otherwise arise.⁵ But, there is no *a priori* reason for the level of general support for the administration to affect the specific form of leverage chosen--carrot versus stick.

⁴This example is one of the few found by Knorr (1975) to be a successful use of leverage.

⁵A lack of such support clearly hindered follow-through efforts by President Carter in the sanctions stimulated by the Afghanistan crisis.

Exogenous variables such as ECONSTATE, WESTATE, and EWSTATE affect policy decisions, which in turn affect the probability of success or failure, as shown in Table 1. In addition, they directly affect the outcome variables. Tables 2 through 4 summarize the direct effects, along with the influence of U.S. policy decisions themselves on outcomes. In Table 2, and in the tables that follow, the reasoning along any one row is, in a general sense, cumulative. That is, if the degree of Soviet sensitivity increases because a change in an exogenous variable, and the change also makes the leverage threat more credible, then the probability increases that the leverage action will be successful. Where there are opposing tendencies with respect to the intermediate outcomes, such as when there is a decreased likelihood of cooperation but more credibility associated with a change in the state of the world, the final outcome will depend on the relative strengths of the opposing effects.

Table 2 lists the effects of all aspects of exogenous and policy variables that are the same regardless of whether the leverage attempt affects trade (e.g., export embargoes) or finance (e.g., refusal to extend trade credits). Tables 3 and 4 treat effects that are unique to one or the other tactic.

The influence of the degree of domestic unity is the same whether goods or credits are to be used as the leverage weapon, as shown by the second entry in Table 2. Reading across the row, the level of domestic support for the administration will not effect Soviet vulnerability to the threatened action, which depends only on such economic factors as the degree of import dependence. It is not clear what the effect of domestic support will be on the likelihood that other countries will cooperate with the U.S. action. One could argue that the support will increase the strength of the U.S. position when it is discussing leverage with its allies. Or one could argue that such effects are so weak as to fade into insignificance beside those of the allies' own economic and political situations. Similar controversy exists with regard to the cooperation of third parties. A high level of support within the United States, however, will not decrease the likelihood of

Table 2

FACTORS AFFECTING ALL FORMS OF LEVERAGE

Exogenous or Decision Variable	Effect on Intermediate Outcomes				Effect on Final Outcomes			
	SOV SEN	ALLIED COOP	OTHER COOP	CRED- IBLE	SUCCESS	C O S T		
						Domestic Econ.	Pol.	Internat'l Pol.
<i>ECONSTATE</i>								
High level of "reverse lever- age" available to USSR	0	-	0	-	-	0	+	+
<i>WESTSTATE</i>								
* High level of general domestic support for U.S. administration	0	?	?	+	+	0	-	?
High level of general cohe- siveness of Alliance	0	+	0	+	+	0	-	-
<i>EWSTATE</i>								
High level of tensions, U.S.-U.S.S.R.	0	?	0	+	?	0	-	?
High level of tensions, W. Europe-USSR	0	+	0	0	+	0	0	-
Other important East-West negotiations are occurring	0	?	0	?	?	0	?	?
<i>TRIGGER</i>								
Precipitating action is an isolated event, not a general policy	0	?	?	0	?	0	?	?

TABLE 2 (con'd)

Exogenous or Decision Variable	Effect on Intermediate Outcomes				Effect on Final Outcomes			
	SOV SEN	ALLIED COOP	OTHER COOP	CRED- IBLE	SUCCESS	C O S T		
						Domestic Econ.	Pol.	Internatl Pol.
<i>TRIGGER (con'd)</i>								
* Action is close to Soviet vital interests further from US interests	0	-	-	-	-	0	+	+
Action is a continuation of old policies not a new initiative	0	-	-	-	-	0	+	+
<i>USPOLICY</i>								
Leverage is used frequently	-	-	-	?	-	+	?	+
U.S. demands are for important concessions (as perceived by the Soviets)	0	-	-	-	-	0	?	+
U.S. follows through on initial actions	+	+	+	+	+	+	-	-
* Use of trade reward rather than punishment	?	+	+	?	?	-	?	-
* Large amount of publicity	0	?	?	?	?	0	?	?

* Cases discussed in the text.

allied or other cooperation, so the positive effect of an increase in credibility, together with either a positive or no effect with regard to the other intermediate outcome variables, means that there will be a positive influence on the final outcome variables SUCCESS, the probability that the Soviets will accede to the leverage demands. A high level of domestic support will decrease part of the cost of the attempt, namely the domestic political cost. It will not affect the domestic economic cost of the attempt to apply leverage, and the influence on the international political costs is indeterminate.

The eighth entry in Table 2 is whether Soviet vital interests are involved in the action triggering the leverage attempt. As is implicitly recognized in many discussions of past attempts, leverage is likely to be unsuccessful at "rolling back" a Soviet action if the original behavior has a substantial relation to Soviet national security interests, but only a marginal connection with U.S. vital interests (e.g., the character of the regime in Poland is a more important national security issue in the Soviet Union than in the United States). In effect, this line in the table recognizes that if the triggering action is of great importance to the Soviets and little importance to the U.S. the leverage attempt loses credibility. No question marks appear in this line, all sides in the trade strategy debate agree on the general proposition that an action vital to Soviet national interests is unlikely to be deterred with economic leverage.

The final two entries in Table 2, in contrast, are areas of considerable controversy in the leverage debate. One is whether leverage attempts should proceed by means of threats or promises. The European view favors the carrot, so that the likelihood of allied cooperation increases if promises are used in attempts at leverage rather than embargoes or trade restrictions. As many third party (non-NATO) countries agree with the European viewpoint, the effect on OTHERCOOP is similar.

The Soviet Union may or may not be more sensitive to threat than to promise, hence the carrot-versus-stick issue has unclear consequences for SOVSEN. In the short run, restrictions cause immediate bottlenecks clearly attributable to the U.S. action. Promised trade rewards are more problematic: They take longer to influence the Soviet economy, and

their ultimate value is more difficult to judge. But some analysts believe the Soviets are more likely to respond positively to a promise than to a threat because there is less appearance of giving in to U.S. demands in the latter case.

The net result on the final outcome is an indeterminate effect on success, but a fair amount of agreement that using the carrot carries lower economic and political costs than using the stick. The appropriate form of action to be selected for use in an attempt at leverage--trade restriction versus promises of future trade favors--remains one of the most controversial areas of the leverage debate.

Another controversial issue concerns the effect of the level of publicity surrounding an attempt at leverage. Some analysts, the best known perhaps being Samuel Huntington (1978), contend that leverage will produce a greater benefit if negotiations proceed quietly. According to proponents of this viewpoint, publicity increases political costs, especially internationally, because of public bickering among allies and the ill will generated thereby. In addition, the argument goes, publicity will reduce the likelihood of the Soviets acceding to U.S. demands because they would want to avoid the appearance of giving in to Western demands. Other analysts believe, however, that publicity actually increases the viability of an attempt at leverage--allies will be more willing to cooperate and the threat will be more credible if the details of the leverage threats (or promises) and demands are clearly and openly presented. In addition, publicity may mobilize public opinion, possibly reducing the political cost of the leverage attempt. A variant of this view holds that U.S. efforts at applying leverage can seldom be kept secret in any event, so it is as well to make a virtue of necessity and make the negotiations public. The effect on publicity on both intermediate and final outcome variables is unresolved, and as a result most of the entries for the last row in Table 2 are question marks.

Table 3 deals with exogenous and decision variables that are particularly relevant to a leverage attempt that uses threats or promises concerning trade in goods and services. Most of the entries in this table are self-explanatory, and few question marks appear. One that does appear relates to the entry on the fraction of total U.S.

Table 3

FACTORS AFFECTING LEVERAGE THAT USES TRADE EMBARGO OR ENCOURAGEMENT

Exogenous or Decision Variable	Effect on Intermediate Outcomes				Effect on Final Outcomes			
	SOV SEN	ALLIED COOP	OTHER COOP	CRED- IBLE	SUCCESS	C O S T		
						Domestic Econ.	Pol.	Internatl Pol.
<i>ECONSTATE</i>								
Large number of supplier countries	-	-	-	0	-	0	+	+
Large number of substitute products	-	-	-	0	-	0	+	+
* High ratio in the U.S. of exports to production	0	+	+	-	?	+	+	-
High ratio in allied countries of exports to production	0	-	0	0	-	0	0	-
High U.S. unemployment in affected sectors	0	+	+	-	?	+	+	-
High unemployment in allied countries in affected sectors	0	-	0	0	-	0	0	+
High ratio of imports to require- ments in the Soviet Union	+	?	?	+	+	0	-	0

TABLE 3 (con'd)

	Effect on Intermediate Outcomes				Effect on Final Outcomes			
Exogenous or Decision Variable	SOV SEN	ALLIED COOP	OTHER COOP	CRED- IBLE	SUCCESS	C O S T		
						Domestic Econ.	Pol.	Internatl Pol.
<i>ECONSTATE</i> (con'd)								
Products affected have high priority to Soviet leaders	+	?	?	+	+	0	-	?
<i>USPOLICY</i>								
High technology products affected rather than agri- cultural goods	?	+	0	0	?	0	?	-
Increase in scope of embargo (from U.S. production only to licensees)	+	-	0	-	-	0	?	+
Increase in severity of embargo	+	-	-	-	?	+	+	+

* Case discussed in the text

production of the good that is exported. High exports to the USSR, relative to production, make a U.S. threat to embargo less credible, because the Soviets realize the United States is less likely carry out a threat whose domestic consequences will be painful and visible in terms of lost sales and lost jobs. President Reagan's removal of the embargo on grain and phosphate exports that were instituted by President Carter in response to Afghanistan has been cited as an object lesson in this regard by those who believe that agricultural embargoes are not a

credible long-term threat. If the threats are indeed carried out, the economic and political costs will be higher if there is a high export/production ratio: Economic costs will probably be higher the greater the amount of exports affected, and political costs will increase because costs are concentrated and therefore seen as unfairly distributed.

Higher export ratios, however, increase the chances of allied and third party cooperation and decrease the international political cost. The United States is seen as sharing in the sacrifice if the threat is implemented rather than as calling for actions that will harm others while the U.S. remains untouched. The European response to the U.S. calls for more restrictive COCOM rules following the imposition of martial law in Poland, for example, was marked by references to unequal export dependence and unequal sacrifices by the European economies compared with the American (references that were made even more apposite by American refusal to restrict grain sales).⁶ The net effect of the decreased credibility but increased Allied cooperation on the probability of success is not clear. The net effect on the costs of the leverage attempt depend on the relative importance of domestic and international costs.

Table 4 shows the influence of exogenous and decision variables that are particularly important when leverage is based on a restriction or expansion of hard-currency loans or export credits granted the Soviet Union. A question mark appears on the U.S. balance of payments position. The reasoning--and the dilemma--is parallel to the one discussed above with respect to export-production ratios. A healthy balance of payments makes credit restrictions less painful, because they do not threaten to weaken the dollar or drive the external account into deficit. If the leverage action is fairly painless to the United States, then the threat is more credible, and lower domestic economic and political costs will be incurred if the threat is carried out. But the United States will attract less international cooperation, and the international political costs will be greater, the less painful is the

⁶For a summary of this aspect of the Poland sanctions, see Guillaume (1983).

Table 4

FACTORS AFFECTING LEVERAGE THAT USES LOANS OR TRADE CREDITS

Exogenous or Decision Variable	Effect on Intermediate Outcomes				Effect on Final Outcomes			
	SOV SEN	ALLIED COOP	OTHER COOP	CRED- IBLE	SUCCESS	C O S T		
						Domestic Econ.	Pol.	Internatl Pol.
<i>ECONSTATE</i>								
High unemploy- ment in U.S. export industries	0	+	0	-	?	+	+	-
High unemploy- ment in allies' export industries	0	-	0	0	-	0	?	+
* Improvement in U.S. balance of payments	0	-	0	+	?	-	-	+
Improvement in allies' balance of payments	0	+	0	0	+	0	?	-
High aggregate import/consump- tion ratio in the USSR	+	+	+	+	+	0	-	0
High level of Soviet hard currency reserves	-	0	0	0	-	0	0	0
<i>USPOLICY</i>								
More drastic curbing of loans and credits	+	-	-	0	?	+	+	+

* Case discussed in the text

leverage threat to the United States. The net effect on the probable success of leverage is difficult to calculate.

An examination of Tables 1-4 reveals more uncontroversial areas than might be apparent from the literature. The tables indicate little controversy over the ways in which changes in economic variables (ECONSTATE) affect the success or costs of an attempt to apply leverage. Similarly, domestic and inter-alliance political relations (WESTSTATE) have fairly straightforward effects on the credibility of a leverage action and on the likelihood of allied cooperation; they therefore have predictable effects on the probability of successful leverage and the costs of the attempt. The tables indicate more controversy concerning how East-West relations and the trigger action affect the attempt at leverage and indicate that the aspects of leverage arousing the most controversy are those related to U.S. policy choices about the style or substance of an attempt to apply leverage.

Although there are certainly major areas of controversy concerning the impact of individual variables, this summary suggests much of the continuing disagreements stem from differing judgments as to the values of the variables. These are questions of fact, and the debate over leverage as a foreign policy tool would benefit from increased attention to factual detail: how many alternative suppliers there are for the good in question, whether other products can be substituted, etc. In light of the recent difficulties of the Soviet economy, the current dependence of the Soviet Union on imports also is an area where further empirical research would be useful.

Scenarios

If the net effect on the final outcome variables is sometimes difficult to determine for a single exogenous variable or U.S. policy choice, the confusion (and controversy) is compounded when the elements of the model are combined in an actual leverage attempt. In order to explore some aspects of a limited number of combinations of variables, this section abandons the element-by-element approach in favor of a scenario approach. Two alternative scenarios illustrate threats or promises based on product exports from the United States to the Soviet Union.

Scenario I contains the following exogenous and decision variables of interest:

- There are a moderate number of non-U.S. suppliers of the product
- The U.S. administration has a low level of general support domestically
- Inter-alliance relations are somewhat strained
- The product chosen for the leverage instrument is of high priority to the Soviet Union, and the Soviets are highly dependent on imports to supply their need for it
- The United States chooses as its leverage instrument an export embargo applied to U.S.-manufactured products (not products produced abroad by subsidiaries or licensees)
- The United States demands and the embargo threat are subject to continuous domestic disagreement that makes follow-through difficult.

The model of leverage presented above guides us to the following conclusions about this scenario. First, the conditions are far from ideal as far as the final outcome variables are concerned. The probability of success will be adversely affected by political conditions, and there will be considerable political costs associated with the attempt to apply leverage in the context described. The chances of success are improved by the reliance on imports of the affected product by the Soviets, although the presence of alternative suppliers reduces the importance of this factor. Major controversies with this scenario will concern whether the presence of alternative suppliers more than outweighs the Soviet vulnerability imposed by high import dependency and whether the domestic and international political costs of attempting to apply leverage are worth the benefits, should leverage be successful in achieving concessions from the Soviets. The first is an empirical question; the latter is a matter of political judgment.

For Scenario II, assume the following is true:

- There are few non-U.S. suppliers of the product and few substitute products
- The U.S. administration enjoys strong domestic support
- Inter-alliance relations are cordial
- The Soviet action is tentative, in an area not vital to its interests
- The Soviet Union imports a large fraction of its requirements for the product
- The embargo is applied consistently.

Given this scenario, there will be little controversy over the combined effect of the variables on the outcome of the event. Some economic and political costs would be incurred in the episode, but the costs would probably be fairly low and the chances for success reasonably high. A similar scenario could be constructed that would stack the deck against the likelihood that an attempt at leverage would be successful and that would imply high costs would be incurred in the attempt.

Thus what quickly becomes apparent when a scenario approach is used is that two areas of controversy regarding leverage are quite important. First is the question of what, in fact, is likely to be the combination of circumstances U.S. policymakers face when they must decide whether to use leverage in a specific instance. Analysts who believe Scenario I is the usual situation in the world will have a very different opinion of leverage than those who see the world looking more like Scenario II. Thus the scenario approach reinforces the conclusion reached above: More agreement over the effectiveness of leverage might be forthcoming if the state of the world were carefully examined. But the examination must extend beyond individual issues of fact to the more problematic arena of probable constellations of factors.

In addition to state of the world variables, the scenarios involve U.S. policy choices. Although future policies are always difficult to predict, the historical record might shed some light on the issue of

probable future events. Historical research could characterize past leverage attempts according to exogenous and policy variables of Tables 1-4. The frequency with which various policy choices are made and the conjunction of specific policy choices and the exogenous variables of the model might yield information about most-likely real world choices.

A second area of controversy illuminated by the scenarios is more difficult: how to determine the net effect on final outcome variables of conflicting influences from the many exogenous variables that impinge on an attempt to apply leverage. Analysts disagree as to what are the "most important" or "key" aspects of the world for an attempt at applying leverage. Here historical or empirical evidence is less likely to be satisfactory, in part because of the disagreement over which historical attempts at leverage have been successful (if any), and in part because the relative importance of different exogenous variables may well change over time.

CAVEATS

In addition to the limitations revealed by the scenario approach of the previous section, there are several important caveats that should be kept in mind when using Tables 1-4 and the model underlying them. The first concerns an omission. The tables have no column indicating the general long term effect of leverage, however used, on international relations. Table 2 made the point that a successful use of leverage will decrease the chances for success the next time around, as the Soviets build defenses against this kind of pressure--witness the multiplication of sources of Soviet grain imports since the Afghanistan sanctions. But there is also the more general argument made by some opponents of leverage that its use leads to undesired side effects. Leverage may lead to the consolidation of the Soviet bloc, or to generally more hostile Soviet policy toward the United States. Leverage also may lead in the long run to unacceptable levels of disunity among Western allies, no matter how great the effort to keep disunity at a minimum.

Also omitted is any discussion of the argument that leverage is useful as a signalling device. The severity of trade sanctions provides

a way of expressing the extent of U.S. disapproval of Soviet actions, the argument goes, so leverage is a useful tool even if the specific demands made during a leverage attempt are not met. The appropriateness of this use of leverage depends on whether other signalling devices are available, and what their costs are. This topic is beyond the scope of the model.

V. FINDINGS, LIMITATIONS, AND IMPLICATIONS

The appropriate U.S. trade policy toward the Soviet Union obviously is a broad and complex topic that will be the subject of continuing policy debate. This Note has surveyed the economic theory and the economic and noneconomic literature that underlie the analysis of the relative merits of various trade strategies. The factors that affect the probable success or failure of a strategy of leverage were discussed in rather extensive detail in the context of a model of the workings of leverage.

The leverage model, although simple in concept, is operationally complex. The model highlights the ways in which various aspects of the state of the world feed into intermediate outcomes, which in turn affect the final outcomes of leverage--success or failure, and the cost of the attempt. The model's approach of using disaggregation to isolate areas of disagreement leads to explicit consideration of the wide variety of individual factors that affect any specific attempt to use leverage, and the sheer number of such factors makes the model somewhat unwieldy. Nonetheless the model can be used as a structure for further debate, providing a way to avoid some of the past sterility in this debate.

Useful as it may be, the model nonetheless does not address several broad issues that any full discussion of leverage must consider. The model gives little insight into the optimal way to choose among possible targets of leverage. There are many of Soviet actions and policies the United States might wish to influence, but at best there is only a limited amount of leverage to apply. The priorities for the use of whatever amount of leverage exists is a topic beyond the scope of this model. In addition, it cannot provide any information on the basic question underlying the use of any policy that has economic or political costs: How does one judge when the costs of a leverage attempt are worth the change in Soviet behavior achieved, should the leverage succeed?

Finally, the model does not address the crucial issue of whether leverage will, in fact, work in a specific instance. The tables allow us to judge how the chances for success, and the costs, of applying

leverage change with the state of the world or with U.S. policy decisions. But the model says nothing about whether the probability of success in the most favorable scenario is 10 percent or 90 percent. It also says nothing about how likely the United States is to encounter (or engineer) the existence of the most likely scenario. However, research guided by the framework of the model--concerning crucial variables as illuminated by the model and areas of controversy identified--may provide a solid base from which to answer these questions.

Examination of Tables 1-4 identifies specific areas where research may reveal evidence that would finally settle some of the arguments over if, when, and how leverage should be applied. More important, the disaggregative approach of the model makes visible an amount of agreement over the influences of specific factors that is surprising in view of the acrimony apparent in the literature.

What remains is a controversy that has three aspects. First, and potentially most resolvable, there is disagreement over the approximate value of certain of the key variables. Disagreements over the number of alternative suppliers of a good, for example, emphasizes the importance of discussing leverage in the context of specific proposed actions, rather than in the abstract.

Uncertainties regarding the domestic Soviet economy's sensitivity to foreign trade loom particularly large. Because of the recent difficulties encountered by that economy, past research may not provide much guidance on this question, and analysis of current and potential future trade dependence is especially important. More generally, however, the model highlights several areas in which the extent of disagreement over leverage might be lessened by research on narrow and reasonably tractable problems.

Second, the model reveals far more disagreement over the effects of political variables on the success or failure of leverage attempts than over the effects of economic variables. In particular, many points of controversy revolve around the effects on Allies' cooperation of several WESTSTATE or USPOLICY variables.

The final aspect of the controversy illuminated by the model is the disagreement, not over any specific fact, although such arguments abound, but rather over judgments on the effect of the combination of

circumstances that will surround any future leverage attempt. Explicitly or implicitly, the arguments seem to be over the net effect of several variables on what are termed intermediate outcomes in the model. One implication of this circumstance is that further work is needed that focuses on ways to evaluate the relative importance of several variables affecting leverage.

Overall, perhaps the most important insight comes from juxtaposing the model with the literature on trade strategies. With a few important and conspicuous exceptions, the literature has addressed the specific variables identified by the model not by appeal to systematic evidence but by reliance on anecdote or abstract logic. Or the proponents of one position or another ignore the individual influences identified here in favor of arguing over the success or failure of past leverage attempts. This would be a reasonable way to test the hypothesis that leverage works (or doesn't work), if there were ways of testing success in any specific historical instance. In practice, little agreement is achieved on the counterfactual--what would have been Soviet behavior had there been no leverage applied--and so this aggregate approach loses its usefulness. The model suggests that a more fruitful approach might be to eschew anecdote and counterfactual and concentrate instead on gathering systematic information on specific factors that everyone agrees will influence leverage outcomes.

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